11. New Degree Program

College of Agriculture and Life Sciences
Department of Entomology
B.S. in Forensic and Investigative Sciences

New Courses

FISC 205. Introduction to Forensic and Investigative Sciences. (3-0). Credit 3. Overview of principles, procedures, and concepts of forensic and investigative sciences; instruction in the definitions, scope, and use of tools, techniques and protocols in forensic applications used to resolve social, regulatory, and legal disputes. Prerequisites: Freshman or sophomore classification or approval of instructor.

FISC 291. Research. (0-12). Credit 1 to 4. Research conducted under the direction of a faculty member in the department of entomology. May be repeated 3 times for credit. Prerequisite: Freshman or sophomore classification.

FISC 316. Biotechnology and Forensics. (3-0). Credit 3. Introduction of applications of biotechnology for agriculture and human health purposes; description of experimental protocols used to create genetically modified organisms (GMOs); discussion of the risks, benefits, and regulations controlling the use of biotechnology in society. Prerequisites: GENE 301, or equivalent or approval of instructor.

FISC 415. Practice and Principles of Science and Law. (3-0). Credit 3. Introduction to series of practitioners of forensic science and the justice system; receive instruction on principles, procedures, and practices used in solving legal and societal issues; examine scientific method and scientific knowledge as applied through expert testimony; enhance critical thinking and reasoning skills in studying and debating different positions of current issues of science and law. Prerequisites: FISC 205, 431 and 432; junior or senior classification or approval of instructor.

FISC 431. The Science of Forensic Entomology. (3-0). Credit 3. Explores the science, technology, and methodology employed to gather, preserve, and present information about insects and other arthropods in such a manner that this information can be used in courts of law as evidence and testimony to help resolve issues of a criminal or civil nature. Prerequisites: Junior or senior classification or approval of instructor. Cross-listed with ENTO 431.
FISC 432. Applied Forensic Entomology. (0-3). Credit 1. Laboratory-based course affording students practical experience using scientific information, methodology, technology, and legal procedures inherent to the field of forensic entomology; emphasis on collecting, preserving, and identifying information as evidence and expert witness testimony in courts of law. Prerequisites: Concurrent enrollment with FISC 431; junior or senior classification or approval of instructor. Cross-listed with ENTO 432.

FISC 435. Case Studies in Problem Solving. (3-0). Credit 3. Development of reasoning strategies by examining a variety of case studies; solving real-world problems as part of an investigative team. Prerequisite: Junior or senior classification or approval of instructor. Cross-listed with ENTO 435.

FISC 481. Seminar. (1-0). Credit 1. Analysis of research topics related to the fields of forensic science and law. May be taken 4 times for credit. Prerequisite: Junior or senior classification or approval of instructor.

FISC 482. Occupational and Professional Development. (2-0). Credit 2. Organized instruction in written and oral communication; acquaint students with private and public-sector companies and agencies as well as leading professionals from these firms to reinforce academic instruction and prepare students for the transition to employment, graduate and professional schools. Prerequisite: Junior or senior classification or approval of instructor. Cross-listed with ENTO 482.

FISC 484. Professional Internship. (0-12). Credit 1 to 4. Independent study and supervised field experience related to a professional area or interest in forensic science. May be taken 3 times for credit. Prerequisite: Junior or senior classification or approval of instructor.

FISC 491. Research. (0-12). Credit 1 to 4. Research conducted under the direction of a faculty member in the department of entomology. May be repeated 3 times for credit. Prerequisite: Junior or senior classification.
Change in Courses

**ENTO 435. Problem Solving in Entomology.**

|-------------------------------|--------------------------------------|--------------------------------------|

| Course description            | From: Development of reasoning strategies; investigate a series of entomological case studies; challenges to solving real-world entomological problems as part of a team of investigators. | To: Development of reasoning strategies by examining a variety of case studies; solving real-world problems as part of an investigative team. Cross-listed with FISC 435. |

**ENTO 482. Career and Professional Development in Entomology.**

<table>
<thead>
<tr>
<th>Course title</th>
<th>From: Career and Professional Development in Entomology.</th>
<th>To: Occupational and Professional Development.</th>
</tr>
</thead>
</table>

| Course description            | From: Organized instruction in written and oral communication; reinforce academic instruction by acquainting students with leading entomology professionals from private and public-sector companies and agencies; students will research entomologically related opportunities and contacts in businesses, corporations and government; issues researched will include expectations and responsibilities of entomologists in public and private-sector employment; professional development and leadership opportunities. Prerequisites: ENTO 201 or equivalent; junior or senior classification or approval of instructor. | To: Organized instruction in written and oral communication; acquaint students with private and public-sector companies and agencies as well as leading professionals from these firms to reinforce academic instruction and prepare students for the transition to employment, graduate and professional schools. Cross-listed with FISC 482. Prerequisite: Junior or senior classification or approval of instructor. |
New Program Request Form for Bachelor’s and Master’s Degrees

Directions: An institution shall use this form to propose a new bachelor’s or master’s degree program. In completing the form, the institution should refer to the document Standards for Bachelor’s and Master’s Programs, which prescribes specific requirements for new degree programs. Note: This form requires signatures of (1) the Chief Executive Officer, certifying adequacy of funding for the new program; (2) a member of the Board of Regents (or designee), certifying Board approval, and (3) if applicable, a member of the Board of regents or (designee), certifying that criteria have been met for staff-level approval. Note: An institution which does not have preliminary authority for the proposed program share submit a separate request for preliminary authority. That request shall address criteria set in Coordinating Board rules Section 5.24 (a).

Information: Contact the Division of Academic Affairs and Research at 512/427-6200 for more information.

Administrative Information

1. Institution: Texas A&M University

2. Program Name – Show how the program would appear on the Coordinating Board’s program inventory (e.g., Bachelor’s of Business Administration degree with a major in Accounting):

Bachelor of Science in Forensic and Investigative Sciences

3. Proposed CIP Code: To be assigned

4. Brief Program Description – Describe the program and the educational objectives:

   Forensic science is a growing area of interest for students seeking to gain entry into careers that deal with the collection, preservation, processing and use of evidentiary information to solve problems. A life sciences-based education which develops skills in problem solving and critical thinking is essential for career opportunities in this field. Forensic and investigative scientists rely upon state of the art scientific discoveries and technologies as tools to seek answers to critical questions in a variety of settings. Molecular, organismal, environmental, and ecological sources of information are often analyzed and interpreted in industrial, regulatory, legal, medical and associated professions. Graduates will be competitive for employment opportunities in quality assurance laboratories, homeland security and investigative services at local, state and national levels. Graduates will also be well prepared for opportunities to enter post-graduate studies or professional schools including medicine, law, and veterinary medicine.

   Interactions with and among plants, animals and microbes occur regularly. These interactions impact public and environmental health and require life science-based forensic and investigative science to improve the quality of life. Homeland security, criminal investigation, environmental quality, agricultural and public health offer careers for students with forensic and investigative skills. Students can also pursue avenues to forensic careers through degree programs in specialty areas such as chemistry, anthropology, physics, computer science and business.

   Forensic and investigative sciences also operate at the cross roads of science and
the legal profession, and provide opportunities for students to consider pre-law preparation. There are growing demands for attorneys with knowledge and understanding of science and research to address legal issues and cases where the interpretation of science and/or scientific data and analyses are pivotal. Law schools often seek candidates with diverse backgrounds and interests, and they look closely at curricula that stress analytical and problem-solving skills, critical reading abilities, writing skills, oral communication and listening abilities, general research skills, and task organization and management skills. The Forensic and Investigative Sciences program provides students with opportunities to build these essential skills and knowledge areas through a combination of required and elective courses.

5. **Administrative Unit** – Identify where the program would fit within the organizational structure of the university:

Department of Entomology, College of Agriculture and Life Sciences

6. **Proposed Implementation Date** – Report the first semester and year that students would enter the program:

Fall 2007

7. **Contact Person** – Provide contact information for the person who can answer specific questions about the program:

   Name: **Dr. Pete D. Teel**
   
   Title: **Professor and Associate Department Head for Academic Programs**
   
   E-mail: **pteel@tamu.edu**
   
   Phone: **(979) 845-3253**
Program Information

I. Need

Note: Complete I.A and I.B only if preliminary authority for the program was granted more than four years ago. This includes programs for which the institution was granted broad preliminary authority for the discipline.

A. Job Market Need – Provide short- and long-term evidence of the need for graduates in the job market.

According to the Occupational Outlook Handbook produced by the U.S. Department of Labor, Bureau of Labor Statistics:

“Jobs for forensic science technicians are expected to increase much faster than average. Crime scene technicians who work for Stat Public Safety Departments should experience favorable employment prospects. Jobseekers with a 4-year degree in a forensic science will enjoy much better opportunities than those with only a 2-year degree.”
(http://www.bls.gov/oco/ocos115.htm)

The National Institutes of Justice (Dale and Becker. 2003. Strategy for staffing forensic scientists. J. Forensic Science) estimate that ten thousand new forensic science positions will be created over the next ten years. These are primarily criminalistics jobs, and do not include other forensic specialists, scientists, and legal specialists. Potential student placement from this program includes the Federal Bureau of Investigation, the Central Intelligence Agency, Department of Homeland Security, medical examiners offices, crime scene laboratories, forensic service laboratories, military services, metropolitan and state police agencies, and graduate and professional schools. In addition, the Texas Trial Lawyers Association and the U.S. Supreme Court has emphasized the need for attorneys with science education and experience. Legal career opportunities also exist in such areas as the pharmaceutical industry, medicine, criminal justice and regulatory agencies such as EPA, FDA, and USDA.

B. Student Demand – Provide short- and long-term evidence of demand for the program.

Our forensic science track in the Entomology BS degree program has grown to 35 students. A new articulation agreement with Blinn College is poised to bring new transfer students into this program. The Director of the TAMU Biomedical Sciences program estimates that approximately 80 students from their program per year are seeking courses or programs in forensic science. Weatherford College has a two-year degree program in forensic science and they are seeking an articulation agreement to allow the opportunity for qualified students to transfer to the TAMU program. In
addition, our department is one of the participants in the newly established, university-wide, blanket articulation agreement signed by former TAMU President Gates in December 2006 with eight community colleges statewide. Internal and external indicators show student demand for forensic science will continue well into the future.

C. Enrollment Projections – Use this table to show the estimated cumulative headcount and full-time student equivalent (FTSE) enrollment for the first five years of the program. *(Include majors only and consider attrition and graduation.)*

<table>
<thead>
<tr>
<th>YEAR</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headcount</td>
<td>30 90% Change of Curriculum 10% Transfers</td>
<td>65 40% Change of Curriculum 20% Transfers</td>
<td>105 40% Change of Curriculum 20% Transfers</td>
<td>150 40% Change of Curriculum 20% Transfers</td>
<td>175 40% Change of Curriculum 20% Transfers</td>
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<tr>
<td>FTSE</td>
<td>30</td>
<td>60</td>
<td>95</td>
<td>140</td>
<td>160</td>
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</table>

II. Quality

A. Degree Requirements – Use this table to show the degree requirements of the program. *(Modify the table as needed; if necessary, replicate the table for more than one option.)*

<table>
<thead>
<tr>
<th>Category</th>
<th>Semester Credit Hours</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Emphasis Area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Education Core Curriculum <em>(bachelor's degree only)</em></td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>Required Courses</td>
<td>77-79</td>
<td>77-79</td>
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<tr>
<td>Directed Electives</td>
<td>8-6</td>
<td>8-6</td>
</tr>
<tr>
<td>Free Electives</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other <em>(Specify, e.g., internships, clinical work)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>120</td>
<td>120</td>
</tr>
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</table>
### B. Curriculum

Use these tables to identify the required courses and prescribed electives of the program. Note with an asterisk (*) courses that would be added if the program is approved. *(Add and delete rows as needed. If applicable, replicate the tables for different tracks/options.)*

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Required Courses</th>
<th>SCH</th>
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<tbody>
<tr>
<td>FISC 205</td>
<td>Introduction to Forensic &amp; Investigative Sciences*</td>
<td>3</td>
</tr>
<tr>
<td>FISC 316</td>
<td>Biotechnology &amp; Forensics</td>
<td>3</td>
</tr>
<tr>
<td>FISC 415</td>
<td>Practice &amp; Principles of Science &amp; Law</td>
<td>3</td>
</tr>
<tr>
<td>FISC 431</td>
<td>The Science of Forensic Entomology**</td>
<td>3</td>
</tr>
<tr>
<td>FISC 432</td>
<td>Applied Forensic Entomology**</td>
<td>1</td>
</tr>
<tr>
<td>FISC 435</td>
<td>Case Studies in Problem Solving**</td>
<td>3</td>
</tr>
<tr>
<td>FISC 481</td>
<td>Seminar</td>
<td>1</td>
</tr>
<tr>
<td>FISC 482</td>
<td>Occupational &amp; Professional Development**</td>
<td>2</td>
</tr>
<tr>
<td>FISC 484 OR FISC 491</td>
<td>Professional Internship OR Research</td>
<td>2</td>
</tr>
<tr>
<td>AGLS 101</td>
<td>Modern Ag. Systems &amp; Renewable Natural Resources</td>
<td>1</td>
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<tr>
<td>BIOL 111/112</td>
<td>Introductory Biology I &amp; II</td>
<td>8</td>
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<tr>
<td>CHEM 101/102</td>
<td>Fundamentals of Chemistry I &amp; II</td>
<td>8</td>
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<tr>
<td>ENGL 104</td>
<td>Composition and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 201/202</td>
<td>College Physics</td>
<td>8</td>
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<td></td>
<td><strong>Required Courses – Science Emphasis Area</strong></td>
<td></td>
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<tr>
<td>CHEM 227</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 228</td>
<td>Organic Chemistry II</td>
<td>3</td>
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<tr>
<td>CHEM 237</td>
<td>Organic Chemistry Laboratory</td>
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<tr>
<td>CHEM 238</td>
<td>Organic Chemistry Laboratory</td>
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</tr>
<tr>
<td>CHEM 315</td>
<td>Quantitative Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 302</td>
<td>Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>MATH 141 OR</td>
<td>Business Mathematics I OR</td>
<td>3 or 4</td>
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<table>
<thead>
<tr>
<th>Category</th>
<th>Semester Credit Hours</th>
<th>Clock Hours</th>
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<tbody>
<tr>
<td><strong>Pre-Law Emphasis Area</strong></td>
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<tr>
<td>General Education Core Curriculum <em>(bachelor's degree only)</em></td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>Required Courses</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>Directed Electives</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Free Electives</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other <em>(Specify, e.g., internships, clinical work)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>SCH</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>MATH 171</td>
<td>Analytic Geometry &amp; Calculus</td>
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<tr>
<td>MATH 142</td>
<td>Business Mathematics II</td>
<td>3-4</td>
</tr>
<tr>
<td>OR</td>
<td>Mathematical Concepts – Calculus</td>
<td></td>
</tr>
<tr>
<td>MATH 131</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 172</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BICH 410/411</td>
<td>Comprehensive Biochemistry I &amp; II</td>
<td>6</td>
</tr>
<tr>
<td>BICH 412</td>
<td>Biochemistry Laboratory I</td>
<td>1</td>
</tr>
<tr>
<td>GENE 301</td>
<td>Comprehensive Genetics</td>
<td>4</td>
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</table>

**Required Courses – Pre-Law Emphasis Area**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 222</td>
<td>Elements of Organic and Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>STAT 303</td>
<td>Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>MATH 141</td>
<td>Business Mathematics I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 142</td>
<td>Business Mathematics II</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td>Introduction to Logic</td>
<td></td>
</tr>
<tr>
<td>MATH 131</td>
<td>Mathematical Concepts – Calculus</td>
<td></td>
</tr>
<tr>
<td>MATH 166</td>
<td>Topics in Contemporary Mathematics II</td>
<td></td>
</tr>
<tr>
<td>GENE 310</td>
<td>Principles of Heredity</td>
<td>3</td>
</tr>
<tr>
<td>BICH 303</td>
<td>Elements of Biological Chemistry</td>
<td>3</td>
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*New course to be added
**Cross-listed with ENTO

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<thead>
<tr>
<th>Prefix and Number</th>
<th>Directed Elective Courses (Science Emphasis Area)</th>
<th>SCH</th>
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</thead>
<tbody>
<tr>
<td>AGRO 301</td>
<td>Soil Science</td>
<td>4</td>
</tr>
<tr>
<td>ANTH 225/ ZOOL 225</td>
<td>Physical Anthropology</td>
<td>4</td>
</tr>
<tr>
<td>ANTH 425</td>
<td>Anthropometry &amp; Osteology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 427</td>
<td>Human Variation</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 213</td>
<td>Molecular Cell Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 413</td>
<td>Cell Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 430</td>
<td>Biological Imaging</td>
<td>4</td>
</tr>
<tr>
<td>BOTN 301</td>
<td>Taxonomy of Flowering Plants</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 318</td>
<td>Quantitative Analysis Laboratory</td>
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<tr>
<td>CHEM 320</td>
<td>Instrumental Analysis Laboratory</td>
<td>2</td>
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<tr>
<td>CHEM 323</td>
<td>Physical Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>ENTO 423</td>
<td>Medical Entomology</td>
<td>3</td>
</tr>
<tr>
<td>ENTO 428</td>
<td>Insect Biotechnology</td>
<td>3</td>
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<tr>
<td>ENTO 429</td>
<td>Insect Biotechnology Laboratory</td>
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<tr>
<td>FSTC/DASC 326</td>
<td>Food Bacteriology</td>
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</tr>
<tr>
<td>GENE 412</td>
<td>Population and Ecological Genetics</td>
<td>3</td>
</tr>
<tr>
<td>GENE 420</td>
<td>Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>GENE 450</td>
<td>Recombinant DNA &amp; Biotechnology</td>
<td>3</td>
</tr>
<tr>
<td>MICR 351</td>
<td>Fundamentals of Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>MICR 360</td>
<td>Microbial Biotechnology</td>
<td>3</td>
</tr>
<tr>
<td>MICR 454</td>
<td>Immunology</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 221</td>
<td>Optics &amp; Thermal Physics</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 304</td>
<td>Criminology</td>
<td>3</td>
</tr>
<tr>
<td>VIBS 305</td>
<td>Biomedical Anatomy</td>
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<tr>
<td>VTPB 405</td>
<td>Biomedical Microbiology</td>
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<tr>
<td>VTPP 425</td>
<td>Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>VTPP 429</td>
<td>Introduction to Toxicology</td>
<td>3</td>
</tr>
<tr>
<td>VTPP 430</td>
<td>Laboratory in Toxicology</td>
<td>1</td>
</tr>
<tr>
<td>ZOOL 319</td>
<td>Integrated Anatomy &amp; Physiology I</td>
<td>4</td>
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### Prescribed Elective Courses (Pre-Law Emphasis Area)

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Prescribed Elective Courses (Pre-Law Emphasis Area)</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1 - Select Minimum of 3 Credit Hours from:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGEC 105</td>
<td>Introduction to Agricultural Economics</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 315</td>
<td>Food &amp; Agricultural Sales</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 344</td>
<td>Food and Agricultural Law</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 350</td>
<td>Environmental &amp; Natural Resource Economics</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 429</td>
<td>Agricultural Policy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 314</td>
<td>Environmental Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 480</td>
<td>Medical Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 483</td>
<td>Professional Ethics</td>
<td>3</td>
</tr>
<tr>
<td>POLS 310</td>
<td>Legal Research</td>
<td>3</td>
</tr>
<tr>
<td>POLS 351</td>
<td>Law &amp; Legislation</td>
<td>3</td>
</tr>
<tr>
<td>POLS 356</td>
<td>Law, Politics, and Policy</td>
<td>3</td>
</tr>
<tr>
<td>RENR 470</td>
<td>Environmental Impact Assessment</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 445</td>
<td>Sociology of Law</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202</td>
<td>Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 322</td>
<td>Applied Microeconomic Theory</td>
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<tr>
<td>ECON 323</td>
<td>Microeconomic Theory</td>
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<tr>
<td>ECON 420</td>
<td>Law &amp; Economics</td>
<td>3</td>
</tr>
<tr>
<td>FRSC 406</td>
<td>Forest Policy</td>
<td>3</td>
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<tr>
<td>MGMT 209</td>
<td>Business, Government and Society</td>
<td>3</td>
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<tr>
<td>MGMT 212</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>RPTS 420</td>
<td>Natural Resource Law</td>
<td>3</td>
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<tr>
<td>WFSC 303</td>
<td>Fish and Wildlife Laws &amp; Administration</td>
<td>3</td>
</tr>
<tr>
<td>Category 2 - Select Minimum of 3 Credit Hours from:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALED 340</td>
<td>Professional Leadership Development</td>
<td>3</td>
</tr>
<tr>
<td>COMM 203</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>COMM 243</td>
<td>Argumentation and Debate</td>
<td>3</td>
</tr>
<tr>
<td>COMM 305</td>
<td>Theories of Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 325</td>
<td>Persuasion</td>
<td>3</td>
</tr>
<tr>
<td>COMM 443</td>
<td>Communication &amp; Conflict</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 304</td>
<td>Criminology</td>
<td>3</td>
</tr>
<tr>
<td>Category 3 - Select Minimum of 3 Credit Hours from:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALED 440</td>
<td>Principles of Technological Change</td>
<td>3</td>
</tr>
<tr>
<td>GENE 420</td>
<td>Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>HIST 447</td>
<td>Constitutional History of the U.S. to 1901</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 111</td>
<td>Contemporary Moral Issues</td>
<td>3</td>
</tr>
</tbody>
</table>

### Faculty

C. Faculty – Use these tables to provide information about Core and Support faculty. Add an asterisk (*) before the name of the individual who will have direct administrative responsibilities for the program. *(Add and delete rows as needed.)*

<table>
<thead>
<tr>
<th>Name of Core Faculty and Faculty Rank</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program</th>
<th>% Time Assigned To Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g.: Robertson, David Asst. Professor</td>
<td>PhD. in Molecular Genetics Univ. of Texas at Dallas</td>
<td>MG200, MG285 MG824 (Lab Only)</td>
<td>50%</td>
</tr>
<tr>
<td>Coates, Craig J Associate Professor</td>
<td>Ph.D. Australian National University</td>
<td>FISC 291, 316, 484, 491</td>
<td>25%</td>
</tr>
<tr>
<td>Name of Support Faculty and Faculty Rank</td>
<td>Highest Degree and Awarding Institution</td>
<td>Courses Assigned in Program</td>
<td>% Time Assigned To Program</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>----------------------------------------</td>
<td>----------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Harris, Marvin Professor</td>
<td>Ph.D. in Entomology Cornell University</td>
<td>FISC 291, 481, 484, 491</td>
<td>10%</td>
</tr>
<tr>
<td>Olson, Jimmy K. Professor</td>
<td>Ph.D in Entomology University of Illinois</td>
<td>FISC 291, 431, 432, 484, 491</td>
<td>25%</td>
</tr>
<tr>
<td>Teel, Pete D Professor</td>
<td>Ph.D. in Entomology Oklahoma State University</td>
<td>FISC 291, 435, 482, 484, 491</td>
<td>20%</td>
</tr>
<tr>
<td>Mulenga, Albert Assistant Professor</td>
<td>Ph.D. in Veterinary Medicine Hokkaido University, Japan</td>
<td>FISC 291, 484, 491</td>
<td>10%</td>
</tr>
<tr>
<td>New Faculty in Year 2007</td>
<td>Ph.D.</td>
<td>FISC 205, 291, 415, 484, 491</td>
<td>50%</td>
</tr>
<tr>
<td>New Faculty in Year 2010</td>
<td>Ph.D.</td>
<td>FISC 291, 431, 432, 484, 491</td>
<td>50%</td>
</tr>
</tbody>
</table>

D. **Library** – Provide the library director’s assessment of library resources necessary for the program. Describe plans to build the library holdings to support the program.

The University Libraries have adequate materials to support the proposed degree. The libraries already subscribe to several indexes and periodicals that relate to forensics plus many of the core monograph titles. New monograph titles are being added and older titles that are not in the collection are under consideration for addition if available. The courses that are already being taught are supported by collections that are adequate to support graduate degrees.

E. **Facilities and Equipment** – Describe the availability and adequacy of facilities and equipment to support the program. Describe plans for facility and equipment improvements/additions.

No new facilities or equipment are required for the implementation of this program. Teaching classrooms and laboratories equipped with computers, microscopy, and reference materials are available. Field sites for teaching demonstrations and student research are available both on and off-campus. The institutional classroom equipment enhancement fees (IEEF) will be used to maintain and improve classroom teaching, equipment, supplies, and support of teaching assistants.
F. Accreditation – If the discipline has a national accrediting body, describe plans to obtain accreditation or provide a rationale for not pursuing accreditation.

Forensic programs are accredited by The Forensic Science Education Program Accreditation Commission (FEPAC) of the American Academy of Forensic Science (AAFS). We expect to apply for provisional accreditation after this program has been in place for three years, which is the earliest timeframe for which we can apply for this initial phase of accreditation. Subsequent phases of accreditation will be pursued; the earliest full accreditation would be awarded is during the fifth year of the program’s existence. We will be assigned a FEPAC coordinator for oversight of the accreditation process at the onset of this program to provide guidance toward accreditation. A criterion for consideration for accreditation is faculty with practical experience in the field of forensics and expert witnessing. We currently have three faculty members with this background, one of which is an AAFS Board Certified Forensic Entomologist. We expect to add an additional Board Certified faculty member in 2007.

III. Costs and Funding

Five-Year Costs and Funding Sources - Use this table to show five-year costs and sources of funding for the program.

<table>
<thead>
<tr>
<th>Five-Year Costs</th>
<th>Five-Year Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel1 $356,000</td>
<td>Reallocated Funds $296,000</td>
</tr>
<tr>
<td>Facilities and Equipment $14,000</td>
<td>Anticipated New Formula Funding3 $0</td>
</tr>
<tr>
<td>Library, Supplies, and Materials $5,450</td>
<td>Special Item Funding $0</td>
</tr>
<tr>
<td>Other2 $0</td>
<td>Other4 $79,450</td>
</tr>
<tr>
<td><strong>Total Costs</strong> $357,450</td>
<td><strong>Total Funding</strong> $357,450</td>
</tr>
</tbody>
</table>

1. Report costs for new faculty hires, graduate assistants, and technical support personnel. For new faculty, prorate individual salaries as a percentage of the time assigned to the program. If existing faculty will contribute to program, include costs necessary to maintain existing programs (e.g., cost of adjunct to cover courses previously taught by faculty who would teach in new program).
2. Specify other costs here (e.g., administrative costs, travel).
3. Indicate formula funding for students new to the institution because of the program; formula funding should be included only for years three through five of the program and should reflect enrollment projections for years three through five.
4. Report other sources of funding here. In-hand grants, “likely” future grants, and designated tuition and fees can be included.
Signature Page

1. **Adequacy of Funding** – The chief executive officer shall sign the following statement:

   I certify that the institution has adequate funds to cover the costs of the new program. Furthermore, the new program will not reduce the effectiveness or quality of existing programs at the institution.

   ___________________________________________  _________________________
   Chief Executive Officer                         Date

2. **Board of Regents Approval** – A member of the Board of Regents or designee shall sign the following statement:

   On behalf of the Board of Regents, I certify that the Board of Regents has approved the program.

   ___________________________________________  _________________________
   Board of Regents (Designee)                     Date of Approval

3. **Board of Regents Certification of Criteria for Commissioner of Assistant Commissioner Approval** – For a program to be approved by the Commissioner or the Assistant Commissioner for Academic Affairs and Research, the Board of Regents or designee must certify that the new program meets the eight criteria under TAC Section 5.50 (b): The criteria stipulate that the program shall:

   (1) be within the institution’s current Table of Programs;
   (2) have a curriculum, faculty, resources, support services, and other components of a degree program that are comparable to those of high quality programs in the same or similar disciplines at other institutions;
   (3) have sufficient clinical or in-service sites, if applicable, to support the program;
   (4) be consistent with the standards of the Commission of Colleges of the Southern Association of Colleges and Schools and, if applicable, with the standards or discipline-specific accrediting agencies and licensing agencies;
   (5) attract students on a long-term basis and produce graduates who would have opportunities for employment; or the program is appropriate for the development of a well-rounded array of basic baccalaureate degree programs at the institution;
   (6) not unnecessarily duplicate existing programs at other institutions;
   (7) not be dependent on future Special Item funding
   (8) have new five-year costs that would not exceed $2 million.

   On behalf of the Board of Regents, I certify that the new program meets the criteria specified under TAC Section 5.50 (b).

   ___________________________________________  _________________________
   Board of Regents (Designee)                     Date
Pete,

We can certainly support the proposal as it now stands (without Geol 101). Geol 101 was only a suggestion. Your program sounds like a very good one, and I hope that it is approved.

John Spang

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John H. Spang, Ph.D.
Professor and Interim Head
Dept. of Geology & Geophysics
Texas A&M University
College St., TX  77843-3115
(979) 845-8972 (voice)
(979) 845-6162 (fax)
office: 108 Halbouty Geosciences Bldg.

http://geoweb.tamu.edu/Faculty/Spang/index.html

At 11:11 AM 1/22/2007, you wrote:

Thanks John, we appreciate your suggestion of GEOL 101 for inclusion in this program. Would you be able to support our program proposal as is without GEOL 101 at this time, with the understanding that we revisit this for inclusion as a Directed Elective in both Emphasis Areas if we are able to actually get the program approved? We would greatly appreciate your consideration. Pete.

>>> "John H. Spang" <spang@geo.tamu.edu> 1/19/2007 4:14 pm >>>
Pete,

Sorry, but your e-mail ended up going to my wife who is the Assistant Provost for Finance and Administration.
After looking at your program, I would suggest Geol 101, Principles of Geology. It is a Tier 1 science course where the students learn an whole new appreciation for the geology around them:

1. basic building blocks, e.g. minerals, rocks
2. processes that shape their world like weathering, erosion, soils, downslope movement
3. predictive tools like where and why different types of earthquakes, volcanoes, etc. occur
4. different types of sedimentary environments, like streams, deltas, flood deposits - similarities and differences.
5. properly done, the students have a new appreciation of the "world" around them...

All that said, this is only a suggested addition. We could easily accommodate the number of students that you indicated. Your program sounds like a good one!

John

At 07:08 PM 1/18/2007, you wrote:

>-----Original Message-----
>From: Pete D Teel [mailto:pteel@ag.tamu.edu]
>Sent: Thursday, January 18, 2007 3:53 PM
>To: Spang Terry
>Subject: Consideration of courses in a Forensic progam.
>
>John, please find attached our proposal for a Bachelor of Science degree
>in Forensic and Investigative Science. We are interested to know
>whether the Department of Geology & Geophysics would like to recommend
>an undergraduate Geology course for consideration as a Directed Elective
>in the Science Emphasis Area. We expect that there will be
>approximately 200 majors in approximately 2-3 years and that the impact
>on classes in the Directed Electives category would be approximately
>5-10 students per semester offering. Note that students must select
6-8
> hours of these electives to complete their program. If you have any
> questions, please let me know. We look forward to considering any
> courses you put forward for this proposal. I apologize for the short
> turn-around, but will need your response by noon on Friday (tomorrow)
> to
> meet the time-table submission for faculty senate consideration.
Thanks
> for visiting with me by phone. Pete.
>
> Pete D. Teel, Professor and Assoc Head for Academic Programs
> Department of Entomology
> TAMU, College Station.
> 979/845-3253

*********************************************************
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Dept. of Geology & Geophysics
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http://geoweb.tamu.edu/Faculty/Spang/index.html
Forensic science is a growing area of interest for students seeking to gain entry into careers that deal with the collection, preservation, processing and use of evidentiary information to solve problems. A life sciences-based education which develops skills in problem solving and critical thinking is essential for career opportunities in this field. Forensic and investigative scientists rely upon state of the art scientific discoveries and technologies as tools to seek answers to critical questions in a variety of settings. Molecular, organismal, environmental, and ecological sources of information are often analyzed and interpreted in industrial, regulatory, legal, medical and associated professions. Graduates will be competitive for employment opportunities in quality assurance laboratories, homeland security and investigative services at local, state and national levels. Graduates will also be well prepared for opportunities to enter post-graduate studies or professional schools including medicine, law, and veterinary medicine.

Interactions with and among plants, animals and microbes occur regularly. These interactions impact public and environmental health and require life science-based forensic and investigative science to improve the quality of life. Homeland security, criminal investigation, environmental quality, agricultural and public health offer careers for students with forensic and investigative skills. Students can also pursue avenues to forensic careers through degree programs in specialty areas such as chemistry, anthropology, physics, computer science and business.

Forensic and investigative sciences also operate at the cross roads of science and the legal profession, and provide opportunities for students to consider pre-law preparation. There are growing demands for attorneys with knowledge and understanding of science and research to address legal issues and cases where the interpretation of science and/or scientific data and analyses are pivotal. Law schools often seek candidates with diverse backgrounds and interests, and they look closely at curricula that stress analytical and problem-solving skills, critical reading abilities, writing skills, oral communication and listening abilities, general research skills, and task organization and management skills. The Forensic and Investigative Sciences program provides students with opportunities to build these essential skills and knowledge areas through a combination of required and elective courses.

**University Core Curriculum Requirements (35 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 104 Composition &amp; Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>Communication*</td>
<td>3</td>
</tr>
<tr>
<td>Humanities*</td>
<td>3</td>
</tr>
<tr>
<td>Visual and Performing Arts*</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences*</td>
<td>3</td>
</tr>
<tr>
<td>U.S. History &amp; Political Science (6 hrs HIST &amp; 6 hrs POLS)*</td>
<td>12</td>
</tr>
<tr>
<td>International and Cultural Diversity*</td>
<td>6</td>
</tr>
<tr>
<td>KINE 198 Health and Fitness</td>
<td>1</td>
</tr>
<tr>
<td>KINE 199 Physical Activity (S/U)</td>
<td>1</td>
</tr>
</tbody>
</table>

*To be selected from University Core Curriculum in the Undergraduate Catalog

**Forensic & Investigative Sciences Core Requirements (21 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FISC 205 Introduction to Forensic &amp; Investigative Sciences</td>
<td>3</td>
</tr>
<tr>
<td>FISC 316 Biotechnology &amp; Forensics</td>
<td>3</td>
</tr>
<tr>
<td>FISC 415 Practice &amp; Principles of Science &amp; Law</td>
<td>3</td>
</tr>
<tr>
<td>FISC 431 The Science of Forensic Entomology*</td>
<td>3</td>
</tr>
<tr>
<td>FISC 432 Applied Forensic Entomology*</td>
<td>1</td>
</tr>
<tr>
<td>FISC 435 Case Studies in Problem Solving*</td>
<td>3</td>
</tr>
<tr>
<td>FISC 481 Seminar</td>
<td>1</td>
</tr>
<tr>
<td>FISC 482 Occupational &amp; Professional Development*</td>
<td>2</td>
</tr>
<tr>
<td>FISC 484 Internship or FISC 491 Research</td>
<td>2</td>
</tr>
</tbody>
</table>
Students will choose one of two emphasis areas: Science or Pre-Law

Science Emphasis Area Requirements:

Natural Science Core Requirements – Science Emphasis Area (44-46 hrs)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 111/112 Introductory Biology I &amp; II</td>
<td>8</td>
</tr>
<tr>
<td>CHEM 101/102 Fundamentals of Chemistry I &amp; II</td>
<td>8</td>
</tr>
<tr>
<td>CHEM 227 &amp; 237 Organic Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 228 &amp; 238 Organic Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 315 Quantitative Analysis</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 201 and 202 College Physics</td>
<td>8</td>
</tr>
<tr>
<td>STAT 302 Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>MATH 141 Business Mathematics I or MATH 171 Analytic Geometry &amp; Calculus</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH 142 Business Mathematics II or MATH 131 Mathematical Concepts – Calculus or MATH 172 Calculus</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Directed Electives – Science Emphasis Area (Select 6-8 hrs from the following courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRO 301 Soil Science</td>
<td>4</td>
</tr>
<tr>
<td>ANTH 225/ZOOL 225 Physical Anthropology</td>
<td>4</td>
</tr>
<tr>
<td>ANTH 425 Human Osteology</td>
<td>3</td>
</tr>
</tbody>
</table>

Life Science Core Requirements – Science Emphasis Area (12 hrs)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGLS 101 Modern Ag. Systems</td>
<td>1</td>
</tr>
<tr>
<td>GENE 301 Comprehensive Genetics</td>
<td>4</td>
</tr>
<tr>
<td>BICH 410/411 Comprehensive Biochemistry I &amp; II</td>
<td>6</td>
</tr>
<tr>
<td>BICH 412 Biochemistry Laboratory I</td>
<td>1</td>
</tr>
</tbody>
</table>

Pre-Law Emphasis Area Requirements:

Natural Science Core Requirements – Pre-Law Emphasis Area (36 hrs)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 111/112 Introductory Biology I &amp; II</td>
<td>8</td>
</tr>
<tr>
<td>CHEM 101/102 Fundamentals of Chemistry I &amp; II</td>
<td>8</td>
</tr>
<tr>
<td>CHEM 222 Elements of Organic &amp; Biological Chem</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 201/202 College Physics</td>
<td>8</td>
</tr>
<tr>
<td>STAT 303 Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>MATH 141 Business Mathematics I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 142 Business Mathematics II or PHIL 240</td>
<td>3</td>
</tr>
</tbody>
</table>

Directed Electives – Pre-Law Emphasis Area (21 hrs)

Choose one course (minimum 3 hours) from each category below. The remaining 11 hrs of directed electives may come from any category.

Category 1 (Select minimum of 3 hrs from):

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGEC 105 Introduction to Agricultural Economics</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 315 Food and Agricultural Sales</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 344 Food and Agricultural Law</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 314 Environmental Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 480 Medical Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 483 Professional Ethics</td>
<td>3</td>
</tr>
<tr>
<td>POLS 310 Legal Research</td>
<td>3</td>
</tr>
<tr>
<td>RENR 470 Environmental Impact Assessment</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 445 Sociology of Law</td>
<td>3</td>
</tr>
</tbody>
</table>

Pre-Law Emphasis Area Requirements:

Natural Science Core Requirements – Pre-Law Emphasis Area (36 hrs)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
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<td>BIOL 111/112 Introductory Biology I &amp; II</td>
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Directed Electives – Pre-Law Emphasis Area (21 hrs)

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<td>3</td>
</tr>
<tr>
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</tr>
<tr>
<td>PHIL 314 Environmental Ethics</td>
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</tr>
<tr>
<td>PHIL 480 Medical Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 483 Professional Ethics</td>
<td>3</td>
</tr>
<tr>
<td>POLS 310 Legal Research</td>
<td>3</td>
</tr>
<tr>
<td>RENR 470 Environmental Impact Assessment</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 445 Sociology of Law</td>
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</tr>
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</table>

Pre-Law Emphasis Area Requirements:

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<tr>
<td>MATH 141 Business Mathematics I</td>
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</tbody>
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<td>3</td>
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<td>PHIL 480 Medical Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 483 Professional Ethics</td>
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</tr>
<tr>
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</tr>
<tr>
<td>RENR 470 Environmental Impact Assessment</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 445 Sociology of Law</td>
<td>3</td>
</tr>
</tbody>
</table>
MEMORANDUM

TO:        Ms. Linda Lacey
FROM:  Karen S. Kubena
SUBJECT:  Entomology Requests

Enclosed is an original and 2 copies of a request for a Forensic & Investigative Sciences (FISC) Major in the department of Entomology. Also included is a Departmental Request for a New Course for the following:

FISC 205 - Introduction to Forensic & Investigative Sciences
FISC 291 - Research
FISC 316 - Biotechnology & Forensics
FISC 415 - Practice & Principles of Science & Law
FISC 431 - The Science of Forensic Entomology
FISC 432 - applied Forensic Entomology
FISC 435 - Case Studies in Problem Solving
FISC 481 - Seminar
FISC 482 - Occupational & Professional Development
FISC 484 - Professional Internship
FISC 491 - Research

The Undergraduate Program Council of the College of Agriculture and Life Sciences has considered and approved these requests. We forward this material to the University Curriculum Committee for review and approval.

Enclosures
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

Submit original form and 25 copies. Attach a course syllabus to each.*

1. This request is submitted by the Department of Entomology

2. Course prefix, number and complete title: FISC 205 Introduction to Forensic & Investigative Sciences

3. Course description (not more than 50 words): Overview of principles, procedures, and concepts of forensic and investigative sciences; instruction in the definitions, scope, and use of tools, techniques and protocols in forensic applications used to resolve social, regulatory, and legal disputes.

4. Prerequisite(s): Freshman, Sophomore, or approval of instructor

5. Is this a variable credit course? □ Yes ☑ No If yes, from ______ to ______.

6. Is this a repeatable course? □ Yes ☑ No If yes, this course may be taken _____ times. Will the course be repeated within the same semester/term? □ Yes ☑ No

7. Has this course been taught as a 489/689? □ Yes ☑ No If yes, how many times? Indicate the number of students enrolled for each academic period it was taught.

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)

   B.S. in Forensic & Investigative Sciences

   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix | Course # | Title (exclude punctuation)
     FISC 205 Introduction to Forensic & Investigative Sciences

<table>
<thead>
<tr>
<th>Lect.</th>
<th>Lab</th>
<th>SCH</th>
<th>Subject Matter Content Code</th>
<th>Admin. Unit</th>
<th>Acad. Year</th>
<th>FICE Code</th>
</tr>
</thead>
<tbody>
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<td>0</td>
</tr>
</tbody>
</table>

Do not complete shaded area.

Approval recommended by:

Head of Department | Date

Chair, College Review Committee | Date

Head of Department (if cross-listed course) | Date

Dean of College | Date

Submitted to Coordinating Board by:

Dean of College | Date

Director of Academic Support Services | Date

Effective Date

* Attach a syllabus according to the guidelines on the Internet site www.tamu.edu/admissions/oaras. To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.
FISC 205 Introduction to Forensic and Investigative Sciences
Three Credit Hours (3-0)
MWF
Location: Heep Center-West Campus
Instructor: Staff

Course Description: An overview of the principles, procedures, and concepts of forensic and investigative sciences, students will receive instruction in the definitions, scope, and variety of instrumentation, techniques and protocols in forensic applications used to resolve social, regulatory, and legal disputes.

Course Learning Outcomes:
- To define forensic and investigative sciences and describe the scope of application.
- To describe problem-solving principles and organize typical operational protocols used in forensic science.
- To recognize the scientific basis and application of tools and techniques in forensic science and to compare capabilities and limitations.
- To summarize and illustrate current scientific, ethical, and legal issues in forensic and investigative science.

Prerequisites: Freshman or Sophomore classification, or approval of instructor.


Grading:
1. Examination I (week 5) 100 pts (20%)
2. Examination II (week 9) 100 pts (20%)
3. Examination III (week 12) 100 pts (20%)
4. Five quizzes @ 20 pts each 100 pts (20%)
5. Final Examination (cumulative) 100 pts (20%)
Total Points 500

Final grades will be based on the percentage of total points earned, thus
A=90-100%; B=80-89; C=70-79; D=60-69; F=<60.

Tentative schedule of lectures, demonstrations, and examinations:

<table>
<thead>
<tr>
<th>Class Period</th>
<th>Topic/Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Introduction; what and who is involved in forensic &amp; investigative science?</td>
</tr>
<tr>
<td>2.</td>
<td>Integration of natural and physical sciences; application of the scientific method.</td>
</tr>
<tr>
<td>3.</td>
<td><strong>Demonstration &amp; Discussion</strong>: Analytical approaches to problem solving.</td>
</tr>
<tr>
<td>5.</td>
<td>Investigation: from civil issues to traumatic death.</td>
</tr>
</tbody>
</table>
6. **Demonstration & Discussion**: Collecting and processing evidence.
7. Role of the forensic pathologist.
8. Forensic toxicology
9. **Demonstration & Discussion**: application of toxicology*.
10. Forensic anthropology and odontology
11. Forensic entomology, palonoology, and taphonomy
12. **Demonstration & Discussion**: application of odontology
13. **EXAMINATION I**.
14. Recognition of bloodstain and liquid spill patterns
15. **Demonstration & Discussion**: bloodstain patterns*.
17. Identification of biological fluids
18. **Demonstration & Discussion**: Techniques of DNA analysis*
19. Forensic microbiology: foodborne illness to bioterrorism.
20. Fingerprints
21. **Demonstration & Discussion**: Fingerprint examination*.
22. Forensic footwear, tire impression and tire track evidence
23. Firearm and tool mark examinations
24. **Demonstration & Discussion**: toolmarks.
25. **EXAMINATION II**.
26. Questioned documents
27. **Demonstration & Discussion**: Handwriting analysis.
28. Basic fire and explosion investigation
29. Forensic applications in materials and construction.
30. **Demonstration & Discussion**: Structural failure*.
31. Vehicular accident reconstruction
32. Use of computers in Forensic science
33. **Demonstration & Discussion**: Computer investigations*.
34. Forensic psychology
35. Forensic psychiatry
36. **EXAMINATION III**
37. Countering chaos: logic, ethics, and the criminal justice system
38. Forensic science and the law
39. **Demonstration & Discussion**: Legal issues in forensic DNA
40. Employment opportunities in forensic and investigative science*.
41. Employment opportunities in forensic and investigative science*.
42. Course review & discussion.

**FINAL EXAMINATION per University Schedule.**

*Guest presentations from Forensic Practitioners.

**Americans with Disabilities Act (ADA) Policy**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you
believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall or call 845-1637.

**Academic Integrity Statement**

*"An Aggie does not lie, cheat, or steal or tolerate those who do."*

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor System. For additional information please visit: www.tamu.edu/aggiehonor.
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

Submit original form and 25 copies. Attach a course syllabus to each.*

1. This request is submitted by the Department of Entomology

2. Course prefix, number and complete title FISC 291 Research

3. Course description (not more than 50 words) Research conducted under the direction of a faculty member in the department of Entomology.

4. Prerequisite(s) Freshman or sophomore classification

5. Is this a variable credit course? ☐ Yes ☐ No If yes, from ___ to ___

6. Is this a repeatable course? ☐ Yes ☐ No If yes, this course may be taken ___ times. Will the course be repeated within the same semester/term? ☐ Yes ☐ No

7. Has this course been taught as a 489/689? ☐ Yes ☐ No If yes, how many times? ______ Indicate the number of students enrolled for each academic period it was taught.

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
      B.S. in Forensic and Investigative Sciences
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix Course # Title (exclude punctuation) FISC 291 Research

<table>
<thead>
<tr>
<th>Lect.</th>
<th>Lab</th>
<th>SCH</th>
<th>Subject Matter Content Code</th>
<th>Admin. Unit</th>
<th>Acad. Year</th>
<th>FICE Code</th>
</tr>
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<tbody>
<tr>
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<td>2 0 4</td>
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<td></td>
<td>0 1 0 3 6 6</td>
</tr>
</tbody>
</table>

Do not complete shaded area.

Approval recommended by:

Head of Department: ___________________________ Date: 8/20/06

Chair, College Review Committee: ___________________________ Date: 9/6/06

Dean of College: ___________________________ Date: 9/11/06

Submitted to Coordinating Board by:

Dean of College: ___________________________ Date: 9/6/06

Director of Academic Support Services: ___________________________ Date: 9/6/06

Effective Date: 9/6/06

* Attach a syllabus according to the guidelines on the Internet site www.tamu.edu/admissions/oaras. To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.

OAR/AS-10599

24 of 68 CC
FISC 291 Research
Variable Credit Hours (1-4)
Instructor: Staff

Course Description: Research conducted under the direction of a faculty member in the Department of Entomology.

Course Learning Outcomes:
- To recognize the scientific method and apply it to a problem/situation.
- To describe problem-solving principles and organize typical operational protocols used in forensic science.
- To summarize and illustrate results from an experiment in a written, scientific manner.

Prerequisites: Freshman or Sophomore classification.

Required Text: None

Grading:
Student submission of research plan (10%)
Student performance during research experiment (45%)
Written summary of research experiment (45%)

Tentative schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Introduction to research, expectations, review of research plan</td>
</tr>
<tr>
<td>2.</td>
<td>Conduct research experiment</td>
</tr>
<tr>
<td>3.</td>
<td>Conduct research experiment</td>
</tr>
<tr>
<td>4.</td>
<td>Conduct research experiment</td>
</tr>
<tr>
<td>5.</td>
<td>Conduct research experiment</td>
</tr>
<tr>
<td>6.</td>
<td>Conduct research experiment</td>
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<tr>
<td>7.</td>
<td>Conduct research experiment</td>
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<tr>
<td>8.</td>
<td>Conduct research experiment</td>
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<tr>
<td>9.</td>
<td>Conduct research experiment</td>
</tr>
<tr>
<td>10.</td>
<td>Conduct research experiment</td>
</tr>
<tr>
<td>11.</td>
<td>Conduct research experiment</td>
</tr>
<tr>
<td>12.</td>
<td>Analysis of research results and compilation of data</td>
</tr>
<tr>
<td>13.</td>
<td>Write summary of research experiment</td>
</tr>
<tr>
<td>14.</td>
<td>Submission of final version of research experiment summary</td>
</tr>
</tbody>
</table>

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environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall or call 845-1637.

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Texas A&M University

Departmental Request for a New Course

Undergraduate • Graduate • Professional

Submit original form and 25 copies. Attach a course syllabus to each.

1. This request is submitted by the Department of Entomology

2. Course prefix, number and complete title: FISC 316 Biotechnology & Forensics

3. Course description (not more than 50 words): Introduction of applications of biotechnology for agriculture and human health purposes; description of experimental protocols used to create genetically modified organisms (GMOs); discussion of the risks, benefits, and regulations controlling the use of biotechnology in society.

4. Prerequisite(s): GENE 301, or equivalent, or approval of instructor

5. Is this a variable credit course? □ Yes ☐ No

6. Is this a repeating course? □ Yes ☐ No

7. Has this course been taught as a 489/689? □ Yes ☐ No

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
      B.S. in Forensic and Investigative Sciences
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix | Course # | Title (exclude punctuation)
    ---------------|------------------|----------------------------------------
    FISC 316 Biotechnology & Forensics

    Lect. | Lab | SCH | Subject Matter Content Code | Admin. Unit | Acad. Year | FICE Code | Level
    -------------|------|-----|-----------------------------|-------------|-----------|-----------|------
    0 | 3 | 00 | 03 | | | | | |

   Approval recommended by:

   Head of Department | Date
   Chair, College Review Committee | Date

   Head of Department (if cross-listed course) | Date
   Dean of College | Date

   Submitted to Coordinating Board by:
   Dean of College | Date

   Director of Academic Support Services | Date
   Effective Date

* Attach a syllabus according to the guidelines on the Internet site www.tamu.edu/admissions/cours. To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.
FISC 316 – BIOTECHNOLOGY & FORENSICS

Syllabus

Instructor Information:
Name: Dr. Craig J. Coates
Email: c-coates@tamu.edu
Office location: 110A Heep Center
Office hours: MWF - 1:30-2:30pm
Phone: 979-458-1219

Class Information:
Location: HPCT 103
Meeting days: TR
Meeting time: 9:35am – 10:50am
Prerequisite: GENE 301, or GENE 302, or BIMS 320

Course Description:
This course is designed to illustrate the uses of biotechnology advances and techniques as applied to the broad fields of medicine and forensics. The students will gain an appreciation and understanding of the underlying molecular biology techniques that are used in a diverse array of settings; including DNA fingerprinting, genetic testing, gene therapy and genetically modified organisms. Additionally, the social, ethical and legal implications of these procedures and applications will be fully considered.

The course is composed of a series of lectures designed to ask and answer questions. Material for each lecture will in part be provided from students assignments, based on interest and gaps in knowledge. While each lecture period will contain a section to address technical aspects and terminology to build base scientific knowledge, the majority of the time will be dedicated to discussion of the broader aspects of the impact of biotechnology on medicine, forensics and society.

The mid-term exams are based on the breadth of biotechnology knowledge and understanding of technology and terminology. The final paper will describe either an existing or future biotechnology application, including a thorough discussion and critique of all options and impacts at social, ethical and legal levels. The final paper will be completed as a group project and prior to final submission each group will give a brief presentation to the class. Peer assessment will be utilized when feasible. Bonus points are available by completing reviews and critiques of web sites, popular press articles, and scientific papers that are related to the course topics.

The overall goal is for each student to participate in an intellectual discussion of the use of biotechnology in the medical and forensic fields, and be able to make a rationale argument of the pros and cons of the uses and impacts of this technology.

Course Goals
- Increase the students’ base knowledge of biotechnology techniques and applications.
- To provide a balanced risk vs. benefit assessment of biotechnology from both scientific and social perspectives.
- Allow students to independently assess and critique information provided from a variety of sources.
- Enable students to become effective communicators of this information to others.

**Policies:**

**Americans with Disabilities Act:** The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If a student believes he or she has a disability requiring an accommodation, he or she should contact the Department of Student Life, Services for Student with Disabilities, in Cain Hall or call 845-1637.

**Scholastic Dishonesty and Attendance:** Student rules governing class attendance and scholastic dishonesty, including plagiarism, can be found on the Texas A&M University Website, under Student Rules 2002-2003 at http://student-rules.tamu.edu/.

**Aggie Honor Code:** An Aggie does not lie, cheat, or steal, or tolerate those who do. Academic misconduct, a violation of the Texas A&M Honor System, involves any of the following: cheating, fabrication, falsification, multiple submission, plagiarism, and complicity. For explanations and examples visit http://www.tamu.edu/aggiehonor

**Make-up Exams:** These will only be provided for official University sanctioned excused absences. The make-up exams will be oral or written exams at a time and in a format to be determined by the instructor.

**Course Requirements:**
Assessment will be based on assignments, mid-term exams, class participation, peer evaluation and a final paper. Bonus points are available by completing critical reviews of websites, popular press articles, or scientific journal articles that relate to the course topics.

**Assignments** (20%) - There are 10 assignments to be completed.

**Mid-term Exams** (10%, 20%) - Mid-term exam #1 will cover the material leading up to that exam. Mid-term exam #2 will cover the material following the first exam. Make-up exams will only be given for official University sanctioned excused absences. The make-ups will be oral exams at a time to be determined by the instructor.

**In class participation** (10%) - This will be a combination of attendance, participation in class discussions, final paper presentations.

**Peer Evaluation** (5%) - The final papers will be a group project and your participation and input will be evaluated by your group members.

**Final Paper** (35%) - Each group member will receive the same score for this paper. The due date for this paper will be determined by the in class presentation date.

**Bonus Points** (up to 15%)
**Web Site** (up to 2%) - Submit a web site link and critical review (will only accept 3 independent submissions from each site)

**Popular Press Article** (up to 5%) - submit a critical review of a current popular press article (within the last 6 months, will only accept 3 independent submissions about the same article)

**Scientific Article** (up to 8%) - Submit a layperson summary of an article that has been published in a peer review journal within the last 6 months.

**Lecture Schedule:**

**Week 1**
Introduction to Biotechnology  
Sources of DNA sequence variation

**Week 2**
Detecting DNA sequence variation  
Use of DNA sequence variation for forensic applications

**Week 3**
Discovery of the genetic basis of inherited disorders  
Methodologies for genetic screening

**Week 4**
Principles of genetic testing, diagnosis and counseling  
Social, ethical and legal issues surrounding genetic databases

**Week 5**
Mid-term Exam #1  
Methodologies for DNA introduction

**Week 6**
Methodologies for DNA integration  
Genetic constructs for gene therapy

**Week 7**
Stem Cell Technologies  
Social, ethical and legal issues surrounding gene therapy and stem cell research

**Week 8**
Genetically modified organisms and medicine  
Cloning Technologies

**Week 9**
Social, ethical and legal issues surrounding GMOs and Cloning  
Mid-term Exam #2
Week 10
Group Meetings to discuss final paper topics and presentations
Group Meetings to discuss final paper topics and presentations

Week 11
Group Meetings to discuss final paper topics and presentations
Group Meetings to discuss final paper topics and presentations

Week 12
Presentations, Groups 1-7
Presentations, Groups 8-14

Week 13
Presentations, Groups 15-21
Presentations, Groups 22-28

Week 14
Presentations, Groups 29-35
Presentations, Groups 36-42
Texas A&M University
Departmental Request for a New Course

1. This request is submitted by the Department of Entomology.

2. Course prefix, number and complete title: FISC 415 Practice & Principles of Science & Law

3. Course description (not more than 50 words): Introduction to series of practitioners of forensic science and the justice system; receive instruction on principles, procedures, and practices used in solving legal and societal issues; examine scientific method and scientific knowledge as applied through expert testimony; enhance critical thinking and reasoning skills in studying and debating different positions of current issues of science and law.

4. Prerequisite(s): FISC 206, 431 & 432, Junior or senior classification or approval of instructor. Cross-listed with _________. Cross-listed courses require the signatures of both department heads.

5. Is this a variable credit course? □ Yes ☐ No If yes, from ________ to ________.

6. Is this a repeatable course? □ Yes ☐ No If yes, this course may be taken ______ times. Will the course be repeated within the same semester/term? □ Yes ☐ No

7. Has this course been taught as a 489/689? □ Yes ☐ No If yes, how many times? ______. Indicate the number of students enrolled for each academic period it was taught. __________

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix | Course # | Title (exclude punctuation) | Lect. | Lab | SCI | Subject Matter Content Code | Admin. Unit | Acad. Year | FICE Code
    FISC 415 Practice & Principles of Science & Law | 0 | 0 | 0 | 0

   Do not complete shaded area.

   Approval recommended by:
   Head of Department: ____________________________ Date: __________
   Chair, College Review Committee: ____________________________ Date: __________
   Dean of College: ____________________________ Date: __________

   Head of Department (if cross-listed course) Date: __________
   Dean of College Date: __________

   Submitted to Coordinating Board by:
   Dean of College Date: __________

   Director of Academic Support Services Date: __________
   Effective Date: __________

   * Attach a syllabus according to the guidelines on the Internet site www.tamu.edu/admissions/oaras. To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.

OARAS-1099
Syllabus
FISC 415 Practice and Principles of Science and Law
Three Credit Hours (3-0)
T-Th (75 min Evening Classes)
Heep Center – West Campus

Instructor: Faculty Assignment Pending
Department of Entomology
Texas A&M University

Course Description: Students will be introduced to a series of practitioners of forensic science and the justice system and receive instruction on the principles, procedures, and practices used in solving legal and societal issues. Students will examine the scientific method and scientific knowledge as applied through expert testimony. Students will enhance their critical thinking and reasoning skills in studying and debating different positions of current issues at the interface of science and law. Practitioners will include crime scene investigators, forensic laboratory managers, detectives, medical examiners, attorneys, and judges.

Course Learning Outcomes:
1. To summarize the development of forensic science and relate its applications to current legal and ethical issues.
2. To analyze the adversarial judicial system and its use of science.
3. To recognize the rules of evidence pertaining to the introduction and use of scientific evidence.
4. To interpret and debate major ethical issues facing forensic scientists today.
5. To critically analyze the use of science and scientific data presented in legal cases.
6. To show command of facts and analytical skills through written products, presentations and debate.

Prerequisites: FISC 205, FISC 431 and FISC 432, Junior or Senior classification, or approval of instructor.

Required Reading: A set of reprinted documents will be prepared for reading the course and students are expected to utilize library and other resources for additional reading assignments as well as for preparation for debates and the semester paper.

Grading:
1. Position Paper & Debate I 100 pts (20%)
2. Position Paper & Debate II 100 pts (20%)
3. Position Paper & Debate III 100 pts (20%)
4. Final Position Paper & Debate 100 pts (20%)
5. Topic Paper, Presentation, and Discussion 100 pts (20%)

Total Points 500

Final grades will be based on the percentage of total points earned, thus A=90-100%; B=80-89%; C=70-79%; D=60-69%; F=<60.
Tentative Schedule of Class topics and activities (15 weeks, 2 class meetings/week):

<table>
<thead>
<tr>
<th>Class No.</th>
<th>Topic/Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Course Introduction; Development and Practice of Forensic &amp; Investigative Science in the US.</td>
</tr>
<tr>
<td>2.</td>
<td>Development and Practice of Forensic &amp; Investigative Science in the US.</td>
</tr>
<tr>
<td>3.</td>
<td>The interdependence of science and law.</td>
</tr>
<tr>
<td>4.</td>
<td>The interdependence of science and law.</td>
</tr>
<tr>
<td>5.</td>
<td>Class Position Papers and Debate.</td>
</tr>
<tr>
<td>6.</td>
<td>Crime scene Protocol and Management</td>
</tr>
<tr>
<td>7.</td>
<td>Crime scene Protocol and Management</td>
</tr>
<tr>
<td>8.</td>
<td>Forensic Laboratory Protocol and Management</td>
</tr>
<tr>
<td>9.</td>
<td>Forensic Laboratory Protocol and Management</td>
</tr>
<tr>
<td>10.</td>
<td>Field Trip: DNA Database Laboratory &amp; Federal Crime Laboratory.</td>
</tr>
<tr>
<td>11.</td>
<td>Chain of Custody: Quality Control and Quality Assurance</td>
</tr>
<tr>
<td>12.</td>
<td>Chain of Custody: Quality Control and Quality Assurance</td>
</tr>
<tr>
<td>13.</td>
<td>Physical Evidence: Collection, Preservation, Chain of Custody</td>
</tr>
<tr>
<td>14.</td>
<td>The Scientific Method and the Court.</td>
</tr>
<tr>
<td>15.</td>
<td>Impact of quality and uncertainty in science and its recognition by the courts.</td>
</tr>
<tr>
<td></td>
<td>a. The Federal Judicial Center collaboration with the National Academy of Sciences to develop the NAS Program in Science, Technology, and Law.</td>
</tr>
<tr>
<td>17.</td>
<td>Evidentiary gatekeepers of scientific evidence.</td>
</tr>
<tr>
<td>18.</td>
<td>Case-management techniques for the introduction of scientific information.</td>
</tr>
<tr>
<td>19.</td>
<td>Practical and legal aspects of scientific testimony.</td>
</tr>
<tr>
<td>20.</td>
<td>Field Trip: Texas Supreme Court and DPS Crime Laboratory.</td>
</tr>
<tr>
<td>21.</td>
<td>Selection of expert witnesses.</td>
</tr>
<tr>
<td></td>
<td>a. The Pilot Project of the National Conference of Lawyers and Scientists, American Association for the Advancement of Science and the Science and Technology Section of the American Bar Association for court-appointed experts.</td>
</tr>
<tr>
<td>22.</td>
<td>Ethical issues at the intersection of science and law.</td>
</tr>
<tr>
<td>23.</td>
<td>Class Position Papers and Debate.</td>
</tr>
<tr>
<td>24.</td>
<td>Student paper presentations and discussion.</td>
</tr>
<tr>
<td>25.</td>
<td>Student paper presentations and discussion.</td>
</tr>
<tr>
<td>26.</td>
<td>Student paper presentations and discussion.</td>
</tr>
<tr>
<td>27.</td>
<td>Final Debates.</td>
</tr>
</tbody>
</table>

No Final Examination will be given.
Americans with Disabilities Act (ADA) Policy
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall or call 845-1637.

Academic Integrity Statement
"An Aggie does not lie, cheat, or steal or tolerate those who do."
Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor System. For additional information please visit: www.tamu.edu/aggiehonor.
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

Submit original form and 25 copies. Attach a course syllabus to each.*

1. This request is submitted by the Department of Entomology.

2. Course prefix, number and complete title: FISC 431 The Science of Forensic Entomology.

3. Course description (not more than 50 words): Explores the science, technology, and methodology employed to gather, preserve, and present information about insects and other arthropods in such a manner that this information can be used in courts of law as evidence and testimony to help resolve issues of a criminal or civil nature.

4. Prerequisite(s): Junior or Senior classification or approval of instructor.

5. Is this a variable credit course? □ Yes □ No If yes, from _______ to _______.

6. Is this a repeatable course? □ Yes □ No If yes, this course may be taken ______ times. Will the course be repeated within the same semester/term? □ Yes □ No

7. Has this course been taught as a 489/689? □ Yes □ No If yes, how many times? _______ Indicate the number of students enrolled for each academic period it was taught.

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with those departments. Attach approval letters.

10. Prefix | Course # | Title (exclude punctuation)
    --- | --- | ---
    FISC 431 Sci Forensic Entomology

<table>
<thead>
<tr>
<th>Lect.</th>
<th>Lab</th>
<th>SCH</th>
<th>Subject Matter Content Code</th>
<th>Admin. Unit</th>
<th>Acad. Year</th>
<th>FICE Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

Do not complete shaded area.

Approval recommended by:

Head of Department: ___________________ Date: ____________

Chair, College Review Committee: ___________________ Date: ____________

Head of Department (or Cross-listed course): ___________________ Date: ____________

Dean of College: ___________________ Date: ____________

Submitted to Coordinating Board by:

Dean of College: ___________________ Date: ____________

Director of Academic Support Services: ___________________ Date: ____________

Effective Date: ____________

* Attach a syllabus according to the guidelines on the Internet site www.tamu.edu/admissions/oacas. To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.

36 of 68 CC
ENTO/FISC 431: THE SCIENCE OF FORENSIC ENTOMOLOGY

Description: The course explores the use of information about insects and other arthropods in the science of Forensics, particularly as this information pertains to investigations of human and animal deaths and abuse, food and other product contamination, thefts, the illegal drug trade and unethical entomological practices and the subsequent use of this information in court-of-law proceedings that may result from such investigations.

(Lecture Section/431: 3 Credit Hours)

Prerequisites: Junior or senior classification or approval of instructor,


Instructor: Jimmy K. Olson, Ph.D., Professor-Entomology

Office: Room 1, Medical & Forensic Entomology Research Laboratory (Bldg. 1043)-Urban Entomology Center (W. Campus, Agronomy Road)

Phone: 845-5037

Office Hours: 2:00 - 3:00 pm on M & F (or by appointment at other times)

Teaching Assistants: TBD

LEC (ENTO/FISC 431): M - F; 12:00 - 1:30 pm HPCT 103

Course Goal: Students successfully completing this course will have a working knowledge of how entomological information is gathered, interpreted, recorded, preserved and used in forensic types of investigations.

Course Learning Outcomes:
1) To summarize the biologies of and ecological roles played by the specific insect and other arthropodan groups of invertebrates most commonly involved in forensic investigations;
2) To examine the collection, analysis, preservation, and use of entomological information in forensic investigations;
3) To identify the various life stages of insects and other arthropods of importance to the field of Forensic Entomology;
4) To examine and interpret how entomological information of a forensic nature is presented and otherwise used in formal proceedings in courts of law.
**Student Evaluation and Course Grades:**

Three (3) equally-weighted examinations (100 points each) given over material presented during the lecture periods will be used as the basis for evaluating student learning in this aspect of the course series. The final grade will be the average grade earned on the 3 examinations.

Grading will be based on:

- A = 100-90%;
- B = 89-80%;
- C = 79-70%;
- 0 = 60-60%;
- F = 59 - 0%.

**Attendance Policy:** The attendance policy followed will be as stated in Section 7 of the Texas A&M University Student Rules (http://student-rules.tamu.edu/).

**American Disability Act:**
The Americans with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If a student believes he or she has a disability requiring an accommodation, he or she should contact the Department of Student Life, Services for Student with Disabilities, in Cain Hall or call 845-1637.

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“An Aggie does not lie, cheat or steal, or tolerate those who do”.

For more information see the Honor Council Rules and Procedures on the web at http://www.tamu.edu/aggiehonor/
# SYLLABUS OUTLINE

**ENTO/FISC 431: THE SCIENCE OF FORENSIC ENTOMOLOGY**

**SPRING**

(MWF 12:40-1:30 pm, Rm 103 HPCT; Credit 3)

**LECTURE SESSIONS**

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Period No.</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Overview of the Course: Course Description, Objectives, Grading, etc.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Focus &amp; History of Forensic Entomology</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>General Entomology &amp; Arthropod Biology</td>
<td></td>
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<tr>
<td>4</td>
<td>General Entomology &amp; Arthropod Biology--Continued</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>General Entomology &amp; Arthropod Biology--Completed</td>
<td></td>
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<tr>
<td>6</td>
<td>Diptera of Major Forensic Importance: Overview of the Order</td>
<td></td>
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<tr>
<td>7</td>
<td>Diptera of Major Forensic Importance: Begin Family Calliphoridae (Blow Flies/Bottle Flies)</td>
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<tr>
<td>8</td>
<td>Diptera of Major Forensic Importance: Family Calliphoridae (Blow Flies/Bottle Flies)--Continued</td>
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<tr>
<td>9</td>
<td>Diptera of Major Forensic Importance: Family Calliphoridae (Blow Flies/Bottle Flies)--Completed</td>
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<tr>
<td>10</td>
<td>Diptera of Major Forensic Importance: Family Sarcophagidae (Flesh Flies)</td>
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<tr>
<td>11</td>
<td>Diptera of Major Forensic Importance: Family Muscidae (House Flies and Other Muscid Fly Relatives)</td>
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<tr>
<td>12</td>
<td>Diptera of Major Forensic Importance: Other Fly Families, to include Sepsidae (Black Scavenger Flies), Piophilidae (Skipper Flies), Phoridae (Scuttle Flies), Stratiomyidae (Soldier Flies), etc.</td>
<td></td>
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<tr>
<td>13</td>
<td>Collection, Preservation &amp; Rearing of Dipteran Samples</td>
<td></td>
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<tr>
<td>14</td>
<td>Summary &amp; Conclusions concerning Diptera of Forensic Importance</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Special Presentation: &quot;DNA Techniques for Identifying Insect Specimens and Other Forensic Uses of DNA&quot; - Dr. Craig J. Coates, Associate Professor, Department of Entomology, Texas A&amp;M University, College Station, TX.</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Special Presentation: &quot;Forensic Palynology: Another Way to Catch Criminals&quot; - Dr. Vaughn M. Bryant, Jr., Professor/Director, Palynology Laboratory, Department of Anthropology, Texas A&amp;M University, College Station, TX.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Special Presentation: &quot;What A Forensic Pathologist Does For Fun&quot; - Dr. Jeffrey Barnard, Chief Medical Examiner-Dallas County, Southwestern Institute of Forensic Sciences, Dallas, TX.</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>FIRST LECTURE EXAM (Over material covered in Lectures 1 - 15)</td>
<td></td>
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<tr>
<td>19</td>
<td>Special Presentation: &quot;Life Dealing With Death As A Forensic Anthropologist&quot; - Dr. Susan Wallace, Associate Professor, Department of Anthropology, Baylor University, Waco, TX.</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Beetles of Major Forensic Importance: Overview of the Order Coleoptera</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Beetles of Major Forensic Importance: Families Staphylinidae (Rove Beetles) and Silphidae (Carrion &amp; Burying Beetles)</td>
<td></td>
</tr>
</tbody>
</table>
Beetles of Major Forensic Importance: Families Histeridae (Clown/Hister Beetles), Dermestidae (Skin/Dermestid Beetles) and Nitidulidae (Sap/Nitidulid Beetles)

Beetles of Major Forensic Importance: Families Scarabaeidae (June/Dung/Scarab Beetles), Cleridae (Checkered/Ham/Clerid Beetles), Carabidae (Ground Beetles) and Tenebrionidae (Darkling Beetles)

**** SPRING BREAK (Be careful, have fun & come back safe!)

Other Arthropods of Forensic Importance

Faunal Succession on Cadavers & Other Carrion: Arthropod on Waves ("Seres") of Succession on Exposed Corpses

Factors Affecting Faunal Succession in Carrion Communities: Disposition of Corpses & Other Carrion - Started

Factors Affecting Faunal Succession in Carrion Communities: Disposition of Corpses & Other Carrion - Completed

Special Presentation: "Organization & Functions of the Texas DPS Crime Lab System" - Mr. William (Bill) Ginn, Laboratory Manager & Mr. Henry (Hank) Amen, Forensic Scientist V-Drug Unit, DPS Headquarters, Crime Laboratory, Austin, TX.

SECOND LECTURE EXAM (Over material covered in Lectures 16-27)

Special Presentation: "Procedures & Protocols Followed by Investigators at a Human Death Scene" - Lt. William B. Bryan, Harris County District Attorney's Office, Houston, TX.

Special Presentation: "Criminal Profiling/Behavioral Analysis" - Mr. David T. Resch, Special Agent, Federal Bureau of Investigation, Washington, D.C.

Factors Affecting Faunal Succession in Carrion Communities: Geographic Location & Natural Controlling Factors

Factors Affecting Faunal Succession in Carrion Communities: Temperature

Factors Affecting Faunal Succession in Carrion Communities: Moisture, Wind and Light

**** SPECIAL READING DAY (No classes)

Factors Affecting Faunal Succession in Carrion Communities: Food Availability & Competition for Food Resources

Factors Affecting Faunal Succession in Carrion Communities: Summary Lecture

Special Presentation: To be announced

Special Presentation: "An Attorney's View of Expert Witnesses and Their Testimony" – Ms. Janis Hampton, Assistant City Attorney, City of Bryan, TX.

Evidence Depositions by ENTO/FISC 432 Forensic Entomology Student CSI Teams

Evidence Depositions by ENTO/FISC 432 Forensic Entomology Student CS1 Teams

Evidence Depositions by ENTO/FISC 432 Forensic Entomology Student

40 of 68 CC
CS1 Teams

**** Monday, 10:30 am - 12:30 pm, (Final Week), THIRD LECTURE EXAM
(Over material covered in Lectures 28-38)

YOU'VE BEEN THERE & DONE IT....NOW YOU CAN GET THE T-SHIRT!!!
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

1. This request is submitted by the Department of Entomology.

2. Course prefix, number and complete title: FISC 432 Applied Forensic Entomology

3. Course description (not more than 50 words): Laboratory-based course affording students practical experience using scientific information, methodology, technology, and legal procedures inherent to the field of forensic entomology; emphasis on collecting, preserving, and identifying information as evidence and expert witness testimony in courts of law.

4. Prerequisite(s): Consumer entomology with FISC 401. Junior or senior classification or approval of instructor. Cross-listed with ENTO 432

5. Is this a variable credit course? □ Yes □ No If yes, from ______ to _______. Cross-listed courses require the signatures of both department heads.

6. Is this a repeatable course? □ Yes □ No If yes, this course may be taken ______ times. Will the course be repeated within the same semester/term? □ Yes □ No

7. Has this course been taught as a 489/689? □ Yes □ No If yes, how many times? ______ Indicate the number of students enrolled for each academic period it was taught.

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
   B.S. in Forensic and Investigative Sciences
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with those departments. Attach approval letters.

10. Prefix | Course # | Title (exclude punctuation)
    ------------------
    FISC 432 | Applied Forensic Entomology

    Lect. | Lab | SCH | Subject Matter Content Code | Admin. Unit | Acad. Year | FICE Code | Level
    ------- | ------ | ----- | ---------------------------- | ------------ | ---------- | --------- | -------
    0 | 0 | 3 | 01 | [ ] | [ ] | [ ] | 010366

    Approved recommended by:
    [Signature]
    Head of Department

    Date

    Chair, College Review Committee
    Date

    Dean of College
    Date

Submitted to Coordinating Board by:

Dean of College
Date

Director of Academic Support Services
Date

Effective Date

* Attach a syllabus according to the guidelines on the Internet site www.tamu.edu/admissions/oaras. To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.

OAR/AS-T099

42 of 68 CC
ENTO/FISC 432 Applied Forensic Entomology (1 credit hour)

**Description:** The course explores the use of information about insects and other arthropods in the science of Forensics, particularly as this information pertains to investigations of human and animal deaths and abuse, food and other product contamination, thefts, and illegal drug trade and unethical entomological practices and the subsequent use of this information in court-of-law proceedings that may result from such investigations.

**Prerequisites:** Junior or senior classification or approval of instructor, Concurrently enrolled in ENTO/FISC 431 or have previously taken ENTO/FISC 431 to be enrolled in ENTO/FISC 432.


**Instructor:** Jimmy K. Olson, Ph.D., Professor-Entomology

**Office:** Room 1, Medical & Forensic Entomology Research Laboratory (Bldg. 1043)-Urban Entomology Center (W. Campus, Agronomy Road)

**Phone:** 845-5037

**Office Hours:** 2:00 - 3:00 pm on M & F (or by appointment at other times)

**Teaching Assistants:** TBD

LAB (ENTO/FISC 432): T,W,Th; 2:00 - 4:50 pm HPCT 210

**Course Goal:** Students successfully completing this course will have a working knowledge of how entomological information is gathered, interpreted, recorded, preserved and used in forensic types of investigations.

**Course Learning Outcomes:**
1) To summarize the biologies of and ecological roles played by the specific insect and other arthropodan groups of invertebrates most commonly involved in forensic investigations;
2) To examine the collection, analysis, preservation, and use of entomological information in forensic investigations;
3) To identify the various life stages of insects and other arthropods of importance to the field of Forensic Entomology;
4) To examine and interpret how entomological information of a forensic nature is presented and otherwise used in formal proceedings in courts of law.
**Student Evaluation and Course Grades:**

Three laboratory practical examinations involving the identification of insects and/or other arthropod specimens and a special graded exercise on giving a deposition of entomological evidence (100 points each) will serve as the basis for evaluation of student learning in this aspect of the course series. The final grade will be the average grade earned on the 3 graded exams and the deposition exercise.

Grading will be based on:
A = 100-90%; B = 89-80%; C = 79-70%; D = 60-60%; F = 59 - 0%.

**Attendance Policy:** The attendance policy followed will be as stated in Section 7 of the Texas A&M University Student Rules (http://student-rules.tamu.edu/).

**American Disability Act:**
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## SYLLABUS OUTLINE

**ENTO 432: APPLIED FORENSIC ENTOMOLOGY**  
**SPRING 2006**  
(Wednesdays, 1:50-4:40 pm, Rm 210 HPCT; Credit 1)

### LABORATORY SESSIONS

<table>
<thead>
<tr>
<th>Laboratory Period No.</th>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
</table>
| 1                     | 18 Jan (Wed.) | "Insights into the Phylum Arthropoda--Its Classes & Orders of Forensic Importance"...  
An exercise in using dichotomous taxonomic keys and other descriptive material to identify specimens of insects and other arthropods to Class and Order level.  
**FIRST LAB PRACTICAL EXAM (Last hour of the Session)**  
Using dichotomous taxonomic keys and other information presented or handed out in previous lectures and/or lab sessions, students will be required to identify 20 specimens of various forensically-important arthropods to Class and in some instances, to Order (as per instructions) for a grade (100 Pts. Total)  
| 2                     | 25 Jan (Wed.) | "Insights to the Phylum Arthropoda--Its Classes & Orders of Forensic Importance" -- continued (for 2 hours)  
| 3                     | 1 Feb (Wed.) | "To Know a Fly"...  
An in-depth study of the basic morphology of a blow fly larva and adult, and an experience in using dichotomous taxonomic keys to indentify fly larvae and adults to Species (4 Bonus Points on lab Grade Average via drawings to be produced by each student during the course of the exercise)  
| 4                     | 8 Feb (Wed.) | "To Know Flies Further"...  
An exercise in identifying a diversity of forensically-important flies collected in the Adult Stage of their development to Species.  
| 5                     | 15 Feb (Wed.) | "To Know Flies Even More!"...  
An exercise in identifying a diversity of forensically-important flies collected in the Third Larval Instar Stage of their development to Species.  
| 6                     | 22 Feb (Wed.) | *SECOND LAB PRACTICAL EXAM (Full Lab Session)*  
Using dichotomous taxonomic keys and other information presented or handed out in previous lectures and lab sessions, students will be required to identify a total of 20 unlabelled specimens of fly adults and larvae to Species for a grade (100 Pts. Total)  

<table>
<thead>
<tr>
<th>Laboratory Period No.</th>
<th>Date</th>
<th>Topic</th>
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</table>
| 7                    | 1 Mar (Wed.) | **Special Laboratory Presentation:** "Life Dealing with Death as a Forensic Anthropologist" (Continued from Lecture)  
Dr. Susan Wallace, Department of Anthropology, Baylor University, Waco, TX |
| 8                    | 8 Mar (Wed.) | "Beetle Basics"...  
An exercise in identifying a diversity of forensically-important beetles collected in the larval and/or adult stage to Family using dichotomous taxonomic keys and other descriptive information. |
| 9                    | 15 Mar (Wed.) | **SPRING BREAK... No Lab**  
No Lab Session on this date. |
| 10                   | 22 Mar (Wed.) | "Welcome Back....To the Beetles!"...  
A practice session concerning beetle identification will be held for the first 2 hours of this session (if needed)  
*THIRD PRACTICAL EXAM (Last hour of the session)  
Using dichotomous taxonomic keys and other information presented or handed out in previous lectures and lab sessions, students will be required to identify 20 labelled specimens of beetle larvae and adults to Family for a grade (100 Pts. Total) |
| 11                   | 29 Mar (Wed.) | **Special Laboratory Presentation:** "Crime Scene Investigation Equipment & Technology Used in the DPS Crime Lab System".  
Mr. William (Bill) Ginn, Headquarters Laboratory Manager, and Mr. Henry (Hank) Amen, Criminalist V-Drug Unit, DPS Crime Laboratory System, Austin, TX |
| 12                   | 5 Apr (Wed.) | "Securing Forensic Entomology Samples at a Death Scene"...  
An overview will be given by Ms. Mariana Griggs, Lecturer Baylor University, on steps one should go through when taking samples of entomological evidence at a death scene  
Then, there will be a field exercise executed where various sampling equipment, techniques and procedures used or followed by Forensic Entomologists will be demonstrated and then used by students to collect a preserve arthropod samples from carrion specimens. |
| 13                   | 12 Apr (Wed.) | "Handling and Assessment of Forensic Entomology Samples in the Laboratory"...  
Various materials, methods and procedures used or followed by Forensic Entomologists to rear, curate and otherwise handle field-collected arthropod samples which may serve as evidence in court proceedings will be demonstrated. |
Using preserved and live arthropod specimens collected from carrion during the previous week’s lab session, students will apply the methods and techniques taught to them in sorting, preserving and identifying the specimens caught by them and determining the age and/or stage of any fly maggots that they might have collected. This work will be done in teams of 4 or 5 students each.

Once the curation work is done and all specimens are identified and aged (when appropriate), students will be asked to establish an estimated postmortem interval (PMI) for the carrion specimens they sampled the previous week and to ascertain other information about the carrions specimens (e.g., cause of death, location where death actually occurred, manner of death, etc.) which may be evidenced by the arthropod collections they made.

Once the analyses described above are completed, the students will be asked to complete report forms and other paperwork that is associated with documenting, maintaining the legal integrity, and reporting out of this kind of evidence and to log the arthropod specimens that support their estimates of PMI and other types of evidential information covered in their reports.

Note: All of the above will be done in preparation for the students taking the ENTO 432 (Laboratory) portion of the Forensic Entomology Course Series to give formal, subpoenaed depositions of their evidence and findings before a cross-examining lawyer and in front of the entire class of students enrolled in the Lecture Portion (ENTO 431) of the course series. These depositions will be given during the regularly-scheduled lecture periods extending over the period 25 April through 2 May 2005 (See the Syllabus for the ENTO 431 Lecture Portion of the course series). Each deposition will be about 20 minutes long and given by teams of 4 to 5 students each, with each team having worked on a different carrion specimen during the previous laboratory periods.

Students in the audience listening to the depositions will each fill out an evaluation form on each presentation given, and the average score on these evaluations will serve as one half of the given team’s total grade for this particular exercise. The other half of the total grade for this exercise will be determined by the Course Instructor and Teaching Assistant assigned to the course. An example of the evaluation form to be used is attached to this syllabus. This exercise in its completion will be worth 100 Points Total.
<table>
<thead>
<tr>
<th>Laboratory Period No.</th>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>19 Apr (Wed.)</td>
<td>&quot;Handling and Assessment of Forensic Entomology Samples in the Laboratory&quot; --- continued</td>
</tr>
<tr>
<td>14</td>
<td>26 Apr (Wed.)</td>
<td>&quot;Clean Up Your Mess Time!&quot;...</td>
</tr>
</tbody>
</table>

Students will continue and complete the work that was started in the previous laboratory session. Also, each team of students will organize their deposition material so that each member of the team will take an active part in the giving of the team's deposition when the time comes for the team to give its deposition in the Lecture Section of the course series.

"Clean Up Your Mess Time!"...

Students will clean up the equipment they used in the previous laboratory exercises and return all the equipment that was given to them to the Teaching Assistant. Items not to be kept or turned in are to be thrown away and the work areas used are to be cleaned. Thank you for your support of our desire to be neat and clean!!

THAT'S IT FOLKS...THANKS FOR YOUR PARTICIPATION AND INTEREST
Texas A&M University  
Departmental Request for a New Course  
1. This request is submitted by the Department of Entomology. 
2. Course prefix, number and complete title: FISC 435 Case Studies in Problem Solving. 
3. Course description (not more than 50 words): Development of reasoning strategies by examining a variety of case studies: solving real-world problems as part of an investigative team. 
4. Prerequisite(s): Junior or senior classification or approval of instructor. Cross-listed with ENTO 435. 
5. Is this a variable credit course? ☐ Yes ☑ No. If yes, from ______ to _______. 
6. Is this a repeatable course? ☐ Yes ☑ No. If yes, this course may be taken ______ times. Will the course be repeated within the same semester/term? ☐ Yes ☑ No. 
7. Has this course been taught as a 489/689? ☐ Yes ☑ No. If yes, how many times? _______. Indicate the number of students enrolled for each academic period it was taught. 
8. This course will be: 
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history) 
      B.S. in Forensic and Investigative Sciences 
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography) 
9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with those departments. Attach approval letters. 
10. Prefix | Course # | Title (exclude punctuation) 

<table>
<thead>
<tr>
<th>FISC</th>
<th>435</th>
<th>Case Studies in Problem Solving</th>
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<td>Lect.</td>
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Approval recommended by: 
Chair, College Review Committee: Date 
Dean of College: Date 

Submitted to Coordinating Board by: 
Dean of College: Date 

Director of Academic Support Services: Date 
Effective Date: 

* Attach a syllabus according to the guidelines on the Internet site www.tamu.edu/admissions/oaras. To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.
Syllabus  
ENTO/FISC 435 Case Studies in Problem Solving  
Three Credit Hours (3-0)  
MWF 10:20-11:10  
Room 205 Heep Center-West Campus

Instructor: Dr. Pete D. Teel, Professor and Associate Department Head  
Department of Entomology  
Texas A&M University  
Office: Rm 416 Heep Center  
Phone/Voice Mail: 845-3253  
Email: pteel@tamu.edu

Course Description: Development of reasoning strategies by examining a variety of case studies; solving real-world problems as part of an investigative team.

Course Learning Outcomes:
- To assess and define problems from simple to complex levels.
- To formulate and analyze reasoning strategies to solve different types of problems.
- To develop a range of intellectual abilities, including critical thinking, logical argument, appropriate uses of evidence, and integration of varied types of information (quantitative, qualitative, text, image, etc.).
- To develop an appreciation for interactions with other disciplines inside and outside of life sciences.
- To recognize the responsibilities and opportunities associated with citizenship in an increasingly interconnected and interdependent world.

Prerequisites: Junior or Senior classification, or approval of instructor.

Required Reading: Selected materials including web-based, scientific and public domain articles, and materials appropriate to specific case studies.

Grading:
- Paper and presentation on Scientific Method..................10% (100 pts)  
- Team paper and presentation on Scientific Method.........20% (200 pts)  
- Case Studies Analyses (papers/presentations)................20% (200 pts)  
- Team paper & presentation Community Project..........20% (200 pts)  
- Team Paper and Debate...........................................20% (200 pts)  
- Attendance and Participation.....................................10% (100 pts)

Total Points 1000  
A=90-100% of cumulative points; B=80-89; C=70-79; D=60-69; F=<60.
Tentative Schedule of Lectures/Activities:

Class Period          Topic/Activity
1. Course introduction and reading assignments; pre-survey of concepts.
2. Defining and assessing problems: Different points of view.
4. Reasoning strategies and problem solving: individuals and teams.
6. Student Presentations and Discussion.
7. Student Presentations and Discussion.
8. Student Presentations and Discussion.
13. Team Presentations and Discussion.
14. Team Presentations and Discussion.
15. Team Presentations and Discussion.
17. Case study presentations from external practitioner clients.
18. Case study presentations from external practitioner clients.
19. Class research and interaction with external practitioner clients.
20. Project Work Day.
21. Team Presentations to class and clients.
22. Team Presentations to class and clients.
23. Team Presentations to class and clients.
25. Case studies with business and community leaders project: overview and assignment.
26. Class research, preparation, and interview request.
27. Team interviews of respective leaders.
28. Team interviews of respective leaders.
29. Team Presentations and Discussion of problem solving and leadership.
30. Team Presentations and Discussion of problem solving and leadership.
31. Evaluation of Team Papers.
34. Case study presentation by external clients: Discussion and Debate Assignment.
35. Case study presentation by external clients: Discussion.
36. Debate team research and preparation.
37. Debate team research and preparation.
38. The Debates: Position statements, debate, class discussion with clients.
39. The Debates: Position statements, debate, class discussion with clients.
40. Reasoning strategies revisited.
41. Reasoning strategies revisited.
42. Problem-solving post-survey of concepts.

No Final Examination will be given.
Americans with Disabilities Act (ADA) Policy
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Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

Submit original form and 25 copies. Attach a course syllabus to each.*

1. This request is submitted by the Department of Entomology

2. Course prefix, number and complete title: FISC 481 Seminar

3. Course description (not more than 50 words): Analysis of research topics related to the fields of forensic science and law.

4. Prerequisite(s) Junior or senior classification or approval of instructor Cross-listed with

5. Is this a variable credit course? □ Yes ☑ No If yes, from __________ to __________.

6. Is this a repeatable course? □ Yes ☑ No If yes, this course may be taken ______ times. Will the course be repeated within the same semester/term? □ Yes ☑ No

7. Has this course been taught as a 489/689? □ Yes ☑ No If yes, how many times? __________ Indicate the number of students enrolled for each academic period it was taught.

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
      B.S. in Forensic and Investigative Sciences
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix | Course # | Title (exclude punctuation)
    FISC 481 Seminar

Lect. | Lab | SCH | Subject Matter Content Code | Admin. Unit | Acad. Year | FICE Code
01001

Do not complete shaded area.

Approval recommended by:
Head of Department [Signature] [Date]
Chair, College Review Committee [Signature] [Date]
Dean of College [Signature] [Date]

Submitted to Coordinating Board by:
Dean of College [Signature] [Date]

Director of Academic Support Services [Signature] [Date] Effective Date

* Attach a syllabus according to the guidelines on the Internet site www.tamu.edu/admissions/oars. To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.
FISC 481 Seminar
Credit Hours (1)
Instructor: Staff

Course Description: Appraisal and analysis of current topics of interest in the fields of forensic and investigative science.

Course Learning Outcomes:
- To compare and critique different points of view on topics of interest.
- To summarize and illustrate results from topic research for written and oral presentation.

Prerequisites: Junior or Senior classification, or approval of instructor.

Required Text: None, Readings will be provided by the instructor.

Grading:
Student participation in weekly discussions. (25%)
Written analysis of assigned readings (25%)
Student Term Paper (25%)
Student Presentation (25%)

Grading Scale:
A=100-90%, B=80-89%, C=70-79%, D=60-69%, F=<59

Tentative schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Introduction to topic of interest &amp; course expectations</td>
</tr>
<tr>
<td>2.</td>
<td>Discussion of assigned reading</td>
</tr>
<tr>
<td>3.</td>
<td>Discussion of assigned reading</td>
</tr>
<tr>
<td>4.</td>
<td>Discussion of assigned reading, Written analysis Due</td>
</tr>
<tr>
<td>5.</td>
<td>Discussion of term paper assignment</td>
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<tr>
<td>6.</td>
<td>Term paper research discussion</td>
</tr>
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<td>7.</td>
<td>Discussion of assigned reading</td>
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<td>Discussion of assigned reading, Written analysis Due</td>
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<td>10.</td>
<td>Discussion of assigned reading</td>
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<tr>
<td>11.</td>
<td>Discussion of assigned reading, Written analysis Due</td>
</tr>
<tr>
<td>12.</td>
<td>Term Papers Due, Student Presentations</td>
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Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

1. This request is submitted by the Department of Entomology.

2. Course prefix, number and complete title: FISC 482 Occupational & Professional Development

3. Course description (not more than 50 words): Organized instruction in written and oral communication, acquaint students with private and public-sector companies and agencies as well as leading professionals from these firms to reinforce academic instruction and prepare students for the transition to employment, graduate and professional schools.

4. Prerequisite(s): Junior or Senior classification or approval of instructor.

5. Is this a variable credit course? ☐ Yes ☑ No If yes, from ______ to ______.

6. Is this a repeatable course? ☐ Yes ☑ No If yes, this course may be taken ______ times. Will the course be repeated within the same semester/term? ☐ Yes ☑ No

7. Has this course been taught as a 489/689? ☐ Yes ☑ No If yes, how many times? ______ Indicate the number of students enrolled for each academic period it was taught.

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
      B.S. in Forensic and Investigative Sciences
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix Course # Title (exclude punctuation)
    FISC 482 Occupational & Professional Development

<table>
<thead>
<tr>
<th>Lect.</th>
<th>Lab</th>
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<th>Subject Matter Content Code</th>
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Approval recommended by:

Head of Department: [Signature]  Date: [Date]
Chair, College Review Committee: [Signature]  Date: [Date]

Head of Department (of cross-listed course): [Signature]  Date: [Date]
Dean of College: [Signature]  Date: [Date]

Submitted to Coordinating Board by:
Dean of College: [Signature]  Date: [Date]

Director of Academic Support Services

* Attach a syllabus according to the guidelines on the Internet site www.tamu.edu/admissions/oaas. To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.

56 of 68 CC
FISC/ENTO 482 Occupational & Professional Development Syllabus
Two Credit Hours (2-0)
Friday 10:20 – 11:10 HPCT 102
Friday 11:30-12:20 HPCT 103

Instructor: Dr. Pete D. Teel, Professor and
Associate Department Head for Academic Programs
Office: Rm 416 - Heep Center
Telephone and Voice Mail: 845-3253
Email: pteel@tamu.edu

Course Description: This course will provide organized instruction in written and oral communication. The course will acquaint students with private and public-sector companies and agencies as well as leading professionals from these firms to reinforce academic instruction and prepare students for the transition to employment, graduate and professional schools.

Prerequisites: Junior or Senior classification or approval of instructor.

Course Learning Outcomes:
1. Students will research and develop opportunities and contacts in businesses, corporations, and government.
2. Students will recognize and compare the expectations and responsibilities in private and public sector employment, professional development and leadership.
3. Students will prepare and critique a variety of written and oral materials essential to successful employment and professional development.

Reference Materials:
1. Career Planning and Campus Recruiting Guide
   Published annually by the Texas A&M University Career Center.
2. Assorted handout materials and external resources.

Course Assignments and Grading:
- Resume preparation – Draft & final version...........100 pts (10%)
- Document cover letter – Draft & final version........100 pts (10%)
- Thank you letter – Draft & final version..............100 pts (10%)
- Memorandum – Draft & final version...................100 pts (10%)
- Profile prospective employer-written report.........100 pts (10%)
- Guest speaker summaries.................................100 pts (10%)
- Video interview and written analysis..................100 pts (10%)
- Tutorial dinner............................................100 pts (10%)
- Career Portfolio...........................................100 pts (10%)
- Attendance & Participation..............................100 pts (10%)

   Total Points 1000
Basis of Course Grade: Written documents will be graded upon how well instructions were followed, organization, content, grammar and spelling, as well as improvements made between the first and final drafts. For every combination of misspelled words or grammatical errors on the final draft, the assignment grade will be lowered by one grade point. Guest speaker summaries will be reviewed for logical interpretation of substantive content obtained from the speakers.

Final Course Grade: A – 90-100%, B – 80-89%, C – 70-79% D – 60-90%, F – Below 60%

Americans With Disabilities Act
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If a student believes he or she has a disability requiring an accommodation, he or she should contact the Office of Support Services for Students with Disabilities in Cain Hall (845-1637) so that such accommodation can be made.

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Proposed Schedule of Topics and Assignments

Session 1. Course overview, Use of library, career center, and web resources. Resume discussion (types, styles, content, uses, and maintenance) and assignment for first draft.


Session 4. Invited Speaker: Written summary.

Session 5. Planning for Graduate and Professional Schools.

Session 7. Return resume's; comments and discussion with assignment of final draft.
Session 8. Invited Speaker: Written summary.

Session 9. Return edited cover letters; Discussion of editorial comments and Suggestions. Review of cover letter applications in job searches, Proposals, and other applications. Collect final drafts of resume's.
Session 10. Invited Speaker: Written summary.

Session 11. Interviews: background, types, guidelines for a successful interview. Interactive video assignment or the Mock Interview.
Session 12. Invited Speaker: Written summary.

Session 13. Dress for Success Program.

Session 15. Letters and memoranda: styles, formats, content and uses.
   Assignment: Thank you as follow-up to the interview.
   Collect interview video assignment.

Session 17. Tutorial dinner: Faculty Club Presentation, including dining and interview etiquette, and situation analyses.
Session 18. Invited Speaker: Written summary.

Session 20. Invited Speaker: Written summary.

Session 22. Invited Speaker: Written summary.

Session 23. Student Presentations: Prospective Employer Profile.
   Collect final drafts of thank you letters and memoranda.
Session 24. Invited Speaker: Written summary.

Session 25. Student Presentations: Prospective Employer Profile.

Session 27. Wrap up session.
Session 28. Final Invited Speaker.
No Final Examination
Partial Speaker/Organization List:

- Bayer Corporation
- Monsanto Company
- DuPont Company, Pioneer Hybrid International
- USDA, APHIS, PPQ
- USDA, ARS
- Armed Forces, Medical Services Corps.
- Crime Scene Supervisor, Austin Police Department
- Office of Professional School Advising, Texas A&M University
- Welmark International
- Hopkins Agricultural Services
- Granovsky Associates
- International Fumigators, Inc.
- Texas Cooperative Extension
- TCE, IPM Interns Program
- Syngenta Corporation
- Rollins, Inc., Orkin Pest Control
- ABC Pest Control
- Harris County Mosquito Control District
- Career Center, Texas A&M University
- Former Students
- Department of Public Safety Crime Laboratory
- Austin Police Department Crime Scene Laboratory
- Federal Bureau of Investigation
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

Submit original form and 25 copies. Attach a course syllabus to each.*

1. This request is submitted by the Department of Entomology

2. Course prefix, number and complete title: FISC 484 Professional Internship

3. Course description (not more than 50 words): Independent study and supervised field experience related to a professional area or interest in forensic science.

4. Prerequisite(s): Junior or senior classification or approval of instructor

5. Is this a variable credit course? ☐ Yes ☐ No If yes, from _______________ to _______________.

6. Is this a repeatable course? ☐ Yes ☐ No If yes, this course may be taken ___ times. Will the course be repeated within the same semester/term? ☐ Yes ☐ No

7. Has this course been taught as a 489/689? ☐ Yes ☐ No If yes, how many times? ________ Indicate the number of students enrolled for each academic period it was taught.

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
   B.S. in Forensic and Investigative Sciences
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix | Course # | Title (exclude punctuation)

| FISC    | 484     | Professional Internship |

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Approval recommended by:
Head of Department Date
Chair, College Review Committee Date
Dean of College Date

Submitted to Coordinating Board by:
Dean of College Date

Director of Academic Support Services Date Effective Date

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61 of 68 CC
FISC 484 Professional Internship  
Variable Credit Hours (1-4)  
Instructor: Staff

Course Description: Independent study and supervised field experience related to a professional area or interest in forensic science

Course Learning Outcomes:
- To recognize the scientific method and apply it to a problem/situation.
- To describe problem-solving principles and organize typical operational protocols used in forensic science.
- To summarize and illustrate results from an experiment in a written, scientific manner.

Prerequisites: Junior or Senior classification or approval of instructor.

Required Text: None

Grading:
Student submission of internship project plan (10%)
Student performance during internship experience (45%)
Written summary of internship project (45%)

Tentative schedule:

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<th>Week</th>
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<td>1.</td>
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<td>Conduct internship project</td>
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<td>11.</td>
<td>Conduct internship project</td>
</tr>
<tr>
<td>12.</td>
<td>Analysis of internship project results and compilation of data</td>
</tr>
<tr>
<td>13.</td>
<td>Write summary of internship project</td>
</tr>
<tr>
<td>14.</td>
<td>Submission of final version of internship project summary</td>
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</table>

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Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

1. This request is submitted by the Department of Entomology.

2. Course prefix, number and complete title: FISC 491 Research

3. Course description (not more than 50 words): Research conducted under the direction of a faculty member in the department of Entomology.

4. Prerequisite(s): Junior or senior classification

5. Is this a variable credit course? ☐ Yes ☐ No If yes, from ___ to ___.

6. Is this a repeatable course? ☐ Yes ☐ No If yes, this course may be taken ___ times. Will the course be repeated within the same semester/term? ☐ Yes ☐ No

7. Has this course been taught as a 489/689? ☐ Yes ☐ No If yes, how many times? Indicate the number of students enrolled for each academic period it was taught.

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
      B.S. in Forensic and Investigative Sciences
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix | Course # | Title (exclude punctuation)
     FISC 491 Research

     Lect. | Lab | SCH | Subject Matter Content Code | Admin. Unit | Acad. Year | FICE Code
     0 | 0 | 1 | 2 | 0 | 4 | [ ] | [ ] | [ ] | [ ] | [ ] | [ ]

     Do not complete shaded area.

Approval recommended by:
Head of Department
Chair, College Review Committee
Dean of College

Submitted to Coordinating Board by:
Dean of College

Director of Academic Support Services

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OAR/AS-1094

64 of 68 CC
FISC 491 Research
Variable Credit Hours (1-4)
Instructor: Staff

Course Description: Research conducted under the direction of a faculty member in the Department of Entomology.

Course Learning Outcomes:
- To recognize the scientific method and apply it to a problem/situation.
- To describe problem-solving principles and organize typical operational protocols used in forensic science.
- To summarize and illustrate results from an experiment in a written, scientific manner.

Prerequisites: Junior or Senior classification.

Required Text: None

Grading:
Student submission of research plan (10%)
Student performance during research experiment (45%)
Written summary of research experiment (45%)

Tentative schedule:

<table>
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<tr>
<th>Week</th>
<th>Activity</th>
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<tbody>
<tr>
<td>1.</td>
<td>Introduction to research, expectations, review of research plan</td>
</tr>
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<td>2.</td>
<td>Conduct research experiment</td>
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**Academic Integrity Statement**

*"An Aggie does not lie, cheat, or steal or tolerate those who do."*

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor System. For additional information please visit: www.tamu.edu/aggiehonor.
Texas A&M University

Departmental Request for a Change in Course
Undergraduate • Graduate • Professional

1. This request is submitted by the Department of _____________

2. Course prefix, number and complete title of course: ENTO 435 Problem Solving in Entomology

3. Change requested:
   a) Prerequisite(s): From ___________________________ To ___________________________
   b) Withdrawal (reason) ___________________________
   c) Cross-list with FISC 435 Case Studies in Problem Solving

   Cross-listed courses require the signatures of both department heads.
   d) Change in course title and description. Enter complete current course title and current course description; complete proposed course title and proposed course description in items 4 and 5.
   e) Change in credit/contact hours. Complete item 6b. Underscore change(s). Attach a course syllabus.*

4. Complete current course title and current course description: Problem Solving in Entomology - Development of reasoning strategies; investigate a series of entomological case studies; challenges to solving real-world entomological problems as part of a team of investigators.

5. Complete proposed course title and proposed course description (not to exceed 50 words): Case Studies in Problem Solving - Development of reasoning strategies by examining a variety of case studies; solving real-world problems as part of an investigative team.

6. a) As currently in course inventory:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Course #</th>
<th>Title (exclude punctuation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTO</td>
<td>435</td>
<td>Problem Solving in Entomology</td>
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<td>Lab SCH</td>
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   b) Changed to:

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</tbody>
</table>

   Approval recommended by:

   [Signature] 9/1/06
   Head of Department

   [Signature] 9/11/06
   Chair, College Review Committee

   [Signature] 9/11/06
   Dean of College

   Submitted to Coordinating Board by:

   [Signature] 9/11/06
   Dean of College

   Director of Academic Support Services
   Date
   Effective Date

   * Attach a syllabus according to the guidelines on the Internet site www.tamu.edu/admissions/oaras. To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737. 67 of 68 CC
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
- Submit original form and 25 copies •

1. This request is submitted by the Department of Entomology

2. Course prefix, number and complete title of course: ENTO 482 Career and Professional Development in Entomology

3. Change requested:
   a) Prerequisite(s): From ENTO 204 or equivalent, junior or senior classification or approval of instructor To Junior or Senior classification or approval of instructor
   b) Withdrawal (reason)
   c) Cross-list with FISC 482 Occupational & Professional Development
   Cross-listed courses require the signatures of both department heads.
   d) Change in course title and description. Enter complete current course title and current course description; complete proposed course title and proposed course description in items 4 and 5.
   c) Change in credit/contact hours. Complete item 6b. Underscore change(s). Attach a course syllabus.*

4. Complete current course title and current course description: Career and Professional Development in Entomology - Organized instruction in written and oral communication, reinforce academic instruction by acquainting students with leading entomology professionals from private and public-sector companies and agencies; students will research entomologically related opportunities and contacts in businesses, corporations and government; issues researched will include expectations and responsibilities of entomologists in public and private-sector employment; professional development & leadership opportunities.

5. Complete proposed course title and proposed course description (not to exceed 50 words): Occupational & Professional Development - Organized instruction in written and oral communication; acquaint students with private and public-sector companies and agencies as well as leading professionals from these firms to reinforce academic instruction and prepare students for the transition to employment, graduate and professional schools.

6. a) As currently in course inventory:

<table>
<thead>
<tr>
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<th>Course #</th>
<th>Title (exclude punctuation)</th>
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</thead>
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<td>Career &amp; Professional Development in Entomology</td>
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b) Changed to:

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<th>Acad. Year</th>
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Approval recommended by:

Head of Department: [Signature] [Date]
Chair, College Review Committee: [Signature] [Date]
Dean of College: [Signature] [Date]

Submitted to Coordinating Board by:

Dean of College: [Signature] [Date]

Director of Academic Support Services: [Signature] [Date]

Effective Date: [Date]

*Attach a syllabus according to the guidelines on the Internet site www.tamu.edu/admissions/cears. To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.